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Home Video Superguide

HOW TO:

Get Great Shots
Pick Your Perfect
Camcorder

PLUS

6 Video
Cameras
Reviewed



Mac Home Theater

Is the Mac Mini Ready for
Your Living Room?

The image shows a black iPod Hi-Fi speaker with a silver top edge, positioned on a dark wooden surface. To the left of the speaker is a small, light green ceramic vase containing two red lilies. In the background, a dark brown picture frame holds a black and white photograph of a baby. The scene is set against a plain, light-colored wall.

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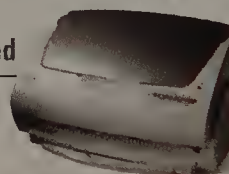


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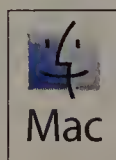
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COVER STORY

40 Digital Video Essentials

RICHARD BAGULEY

Picking the perfect camcorder shouldn't be a guessing game. Before you lay down your money, see which features really matter and which are pure hype. If you already have a camcorder, we'll show you how to improve your movie-making skills with ten rules the pros swear by.

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59 Making the Grade

Summer break is coming to an end, and students are once again college-bound. Here are our picks for the most dorm-friendly Mac gear for you or your favorite scholar.

50 The Multimedia Mac Mini

CHRISTOPHER BREEN

With its small size, powerful processor, and bevy of connections, the Intel Mac mini has the potential to succeed where other Macs have failed—as the core of your multimedia center. How well does it work? How can you make it function better? What do you need to add? We answer these questions and more.



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On the Cover
Photograph by Peter Belanger



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JASON SNELL

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DAN FRAKES

Transfer large files, keep abreast of your laptop's charging status, add hot keys to your contextual-menu items, work more cleanly with Windows volumes, and tag your videos for the iPod. Plus: check out three cool menu-bar utilities.



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MAC BEAT

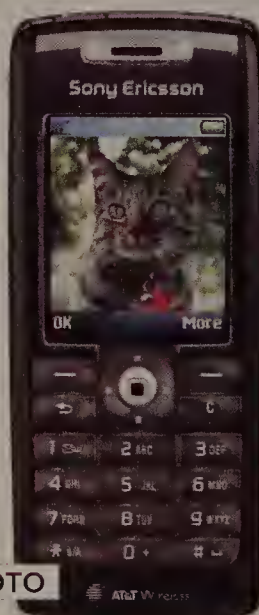
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- > Senior Editor Christopher Breen shows you how to get the most out of Apple's Address

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- > And make sure you check out the best of Macworld.com.

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CHRISTOPHER BREEN
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Net Returns

It's easy to take the Internet for granted. But once in a while, I'm reminded of just how integral the Net's become to my life—by making me more productive at work, by making it easier to stay in touch with family and friends, and most importantly, by making it simple to find out who That Guy is.

Knowledge on Demand

When I'm watching a show or movie and just *can't* remember where I've seen That Guy before, I pull over my MacBook and call up the Internet Movie Database (imdb.com). Within moments, I've confirmed that That Guy is really The Same Guy who played That Other Guy in That Other Movie. How did we ever live without this vital information?

Wikipedia (wikipedia.org) is the other Net resource I use all the time. The Internet encyclopedia has its detractors. (Because anyone can edit a Wikipedia article, entries can fall victim to malicious revisionism.) Wikipedia is also a perfect example of the old saying that you never want to see what happens inside a sausage factory. Behind the scenes, Wikipedia can be a seething cauldron of debate and political maneuvering. But the end result is a site that has harnessed the pure power of the Internet better than any other.

Whose Tube?

Another site that's a perfect use of the Internet is YouTube (youtube.com). Last May, I posted a brief video there showing what was lurking underneath the MacBook's battery bay (macworld.com/1436). Within a few days, it had been viewed tens of thousands of times. (As I write, the number is at nearly 200,000!)

As a magazine editor, I value the power of words. But there are times when they just can't do as good a job as a photograph. And there are other times when even a photo isn't enough—only video can make things really clear. Thanks to the Web, we can choose whatever medium works the best.

To Web and Back

That's not the only way the Internet has changed the way we work at *Macworld*. For example, when a new Apple product appears, our news and reviews now go online first; only then do we figure out when and where they'll be in print.

The Net also allows us to publish material that would never fit in the printed magazine. Back in March, Rob Griffiths documented his experience running an Intel-based Mac mini (macworld.com/1532). The series was roughly 16,000 words long—too much for the magazine, but just fine online.

One of the questions that came up in Rob's series: How well would the new Mac mini perform as a home entertainment center? We asked Christopher Breen to spend some time with a Mac mini to answer that question, and he wrote up his findings for *Macworld.com*. But a funny thing happened on the way to the Web: Chris's story developed so nicely, we decided it'd make a really great magazine story, too (see page 50).

Pages without Paper

Once upon a time, Andy Ihnatko wrote a monthly column for *Macworld* magazine. Much to our regret, we had to drop his print column a few years back. But recently, when we launched our new MacUser Weblog, we went back to Andy and asked him if he'd like to write for us again. And so, once again, you can read Andy's monthly prose stylings at www.macuser.com/ihnatko/.

Likewise, we've been trying to determine how to give the stories we publish in the magazine a longer shelf life. Over the course of two years, we'll publish thousands of words on digital photography, the iPod and iTunes, Mac OS X, iLife, and more. Again, thanks to the Internet, we've found a way to collect all of those stories in one, convenient thematic package.

Last fall, we released our first *Macworld Superguide*, a downloadable PDF e-book with 100 pages about digital photography. Now we've got a second title, the *Macworld iPod and iTunes Superguide*, which has 88 pages of tips and tricks for getting the most out of the iPod and iTunes (macworld.com/1371).

None of this is to say that we think print is dead—far from it. Print still does some things that the Internet and PDFs can't. When we released our first PDF superguide, we discovered that a lot of people would rather buy the book in paper form, not as a digital file. So from now on, those superguides will also be available as good old-fashioned bound books (available at macworld.com/1533). After all, even the Internet has its limits. □

You're a print person—after all, you're reading this magazine. But where do you stand on the whole print versus Internet debate? Pay a visit to our online forums at macworld.com/forums and let us know what you think.

Mp3 Speaker Case

Bring it with you and battle the elements



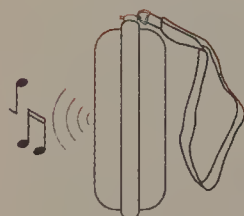
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Robert Lemke, D.D.S., M.D.

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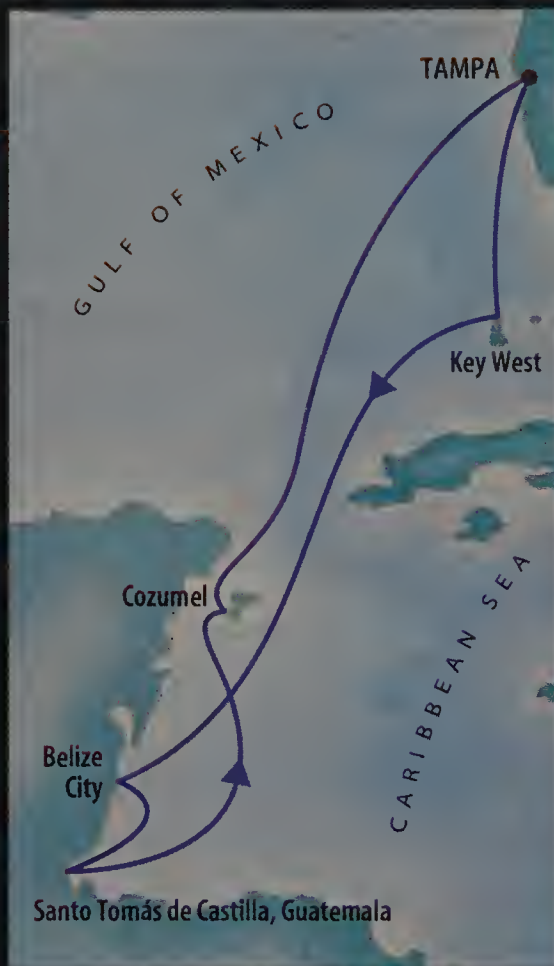
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Tom Grollman, M.D.

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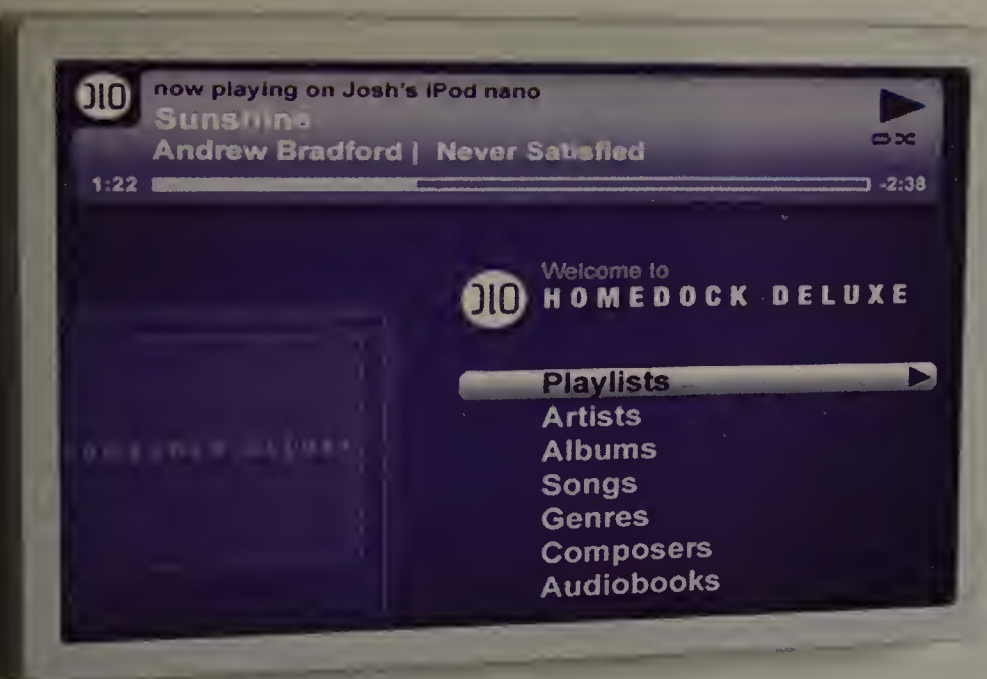
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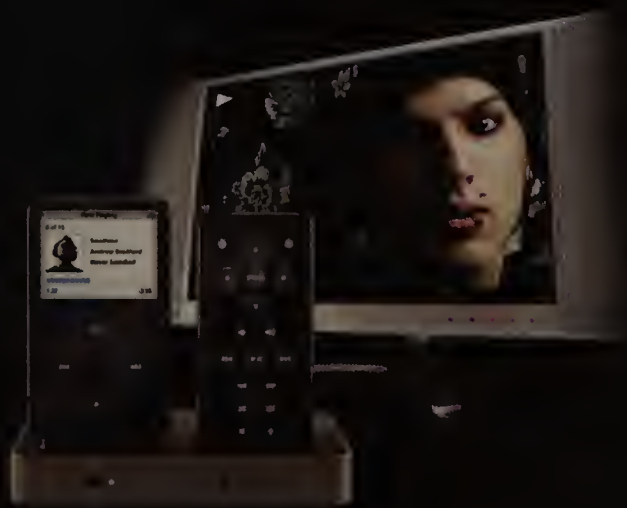
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FEEDBACK

The Shock of the New

By now, you have to forgive Mac fans for being a bit punchy. Over the past year, they've been through two tectonic shifts in the Mac landscape. First came the shock of hearing the words "Mac" and "Intel chips" in the same sentence. Then came the astonishing news that—with the debut of those Intel Macs and the release of Apple's Boot Camp software—it was now possible to run Windows on a Mac. Once they'd recovered a bit from that last development, *Macworld* readers went to their keyboards to let us know what they thought of it.

Boot Camp Recruits

TOM KIRKMAN

Apple's decision to allow the Mac to boot Windows is going to be a public relations nightmare. Windows is defective. It is laden with bugs, glitches, and holes. Even when installed on a Mac, it will still freeze, hang, and generally frustrate the user. But how many Mac newcomers will blame the Mac for these problems instead of Windows? Apple's reputation for making trouble-free products will take a huge hit.

DALE STEBBINS

Boot Camp works great! After buying Windows XP from VioSoftware (www.viosoftware.com) for \$133, I installed it on my Mac mini with no problems. I now use it to run QuickBooks and the occasional work application. My success may be partly because I was working with a brand-new computer. For anyone thinking of doing this, my best advice is this: follow Apple's Boot Camp directions exactly. Don't deviate from the step-by-step instructions, and you should succeed too.

ROBIN COWAN

My first reaction to Boot Camp was "Great, now everyone can join the Apple camp." However, I see a Trojan horse here, insofar as Boot Camp removes the incentive for third-party developers to write programs for the Mac. I predict that ultimately we will boot up Mac OS to run Apple software only; sadly, we'll be forced to use Windows for everything else.

CHRIS HOFFLIN

Three hard truths about corporate IT will keep the Mac a boutique brand: 1. Macs are significantly more expensive than PCs. Corporations are not looking for coolness, they're looking at performance per dollar,

and that's where the Mac loses in comparison with Dell, HP, and Lenovo. 2. Mac security has come a long way, but the Mac still doesn't offer distributed security like Active Directory. 3. The number of applications available for the PC still dwarfs the choices on the Mac platform. The vast majority of industry-specific applications support Windows only. Boot Camp won't change any of these factors. Macs make very expensive Windows machines.

BRUCE POLKOWSKY

Now that Apple has developed Mac OS X for Intel chips and offered a way to run Windows on an Intel Mac, am I the only one thinking there should be a way to run the Universal version of OS X on an Intel PC? I hope someone figures that out so I can liberate my work PC.

BILL EGAN

While you're talking about ways of running two operating systems on a single computer, I think you should compare that to using a KVM switch to alternate between two separate computers. I'm currently running a simulation on my Windows XP machine while I write this on my Mac. I have only one monitor, but I can quickly switch between the two machines by pressing a hot-key combination on my only keyboard. I can import data from my XP machine via Ethernet or e-mail, and incorporate it into a spreadsheet on my Mac. There are some real advantages to working this way.

Apple's Top 30

JIM MARTIN

I was greatly disappointed to see that you omitted Keynote from your list of the top 30 Apple products of all time (*Mac Beat*, June 2006). Even in its first version,

Keynote overwhelmed PowerPoint with its capabilities and elegance, and each major update just makes the difference more significant. The advent of Keynote caused Microsoft to add some goodies to PowerPoint, but it is still a pain to use compared with Keynote.

RICK BLAINE

Of all the articles published so far about Apple's 30th anniversary, I haven't seen one that mentioned OpenDoc. Today it sounds like just another obscure technology that never really took off. But back in 1996 it was the hottest thing Apple had to show. Apple executives at the time said that the two cornerstone technologies for the company's future were the PowerPC and OpenDoc. We all know how that prediction turned out.

BOB THOMAS

Although it wasn't an Apple product, I was surprised that you mentioned PageMaker only in the LaserWriter section. Without PageMaker and the people who used it to jump-start the desktop publishing craze, I'm not sure the Macintosh would have been anything more than a historical curiosity, like the Commodore or Osborn.

There's no doubt that PageMaker was hugely influential in putting the Mac on the map. But there's also no doubt that it wasn't an Apple product and hence didn't fit into a list of the most important Apple products of all time.—Ed.

CORRECTIONS

In the story "30 Products for 30 Years" (*Mac Beat*, June 2006), the photos accompanying two items, the PowerBook G4 (Titanium) and the iMac Core Duo, were incorrect.

Pros and Cams

KENNETH REITHER

I found Richard Baguley's roundup of point-and-shoot digital cameras to be superficial and grossly in error. For example, I seriously doubt that the Nikon Coolpix P2's image quality is "mediocre." I have a similar lens on a different Nikon point-and-shoot, and the image quality is excellent. Also, I'm sure some of the reviewed cameras have better battery life than others, but to say that four of the cameras are "flawed" in that respect is ridiculous. A battery that lasts 200 images between recharges is hardly flawed.

TRACY POPENHAGEN

I love your reviews of digital cameras, but I have one big complaint: the pictures. Why, oh why, do you show the fronts of cameras? How often do digital camera users look at the front? I want to see the back. How big is the display? What kind of controls do I get? How big is the viewfinder? I know it's traditional to show products in a face-on shot, but in this case it does the reader no good.

No Accounting for Taste

GARY STEIN

I followed your advice (which is usually pretty good) and purchased MYOB's First Edge (*More Reviews*, June 2006). Big mistake! It comes with no customer support—none, zero, nada. There isn't even e-mail support! If you have a question, you have to *buy* customer support, which costs \$50 or more. I'm sure FirstEdge is a good product, but that's not enough to overcome the poor customer support. I wish I'd bought Intuit's QuickBooks—it offers better support, plus compatibility with Quicken and TurboTax. If QuickBooks had an entry-level Mac product, I'd throw FirstEdge out.

DEAN OLSEN

About your review of QuickBooks Pro (*More Reviews*, June 2006): I am an accountant and run an almost all-Mac office, and I think QuickBooks is simply unacceptable as a business accounting package. (It does bring me a lot of customers, though, because of how badly it can screw up a business's books.) I get very upset when

reviewers publish such favorable reviews of inferior products. Please hold the developers to the fire and make them publish business software for the Mac that is acceptable.

Which Way Up?

CLYDE MUELLER

In "New Life for Old Photos" (June 2006), author Derrick Story referred to the film's emulsion as "the shinier side." The emulsion side is actually the duller, matte side. It's important to know which side is which, or else all your scans come out flopped.

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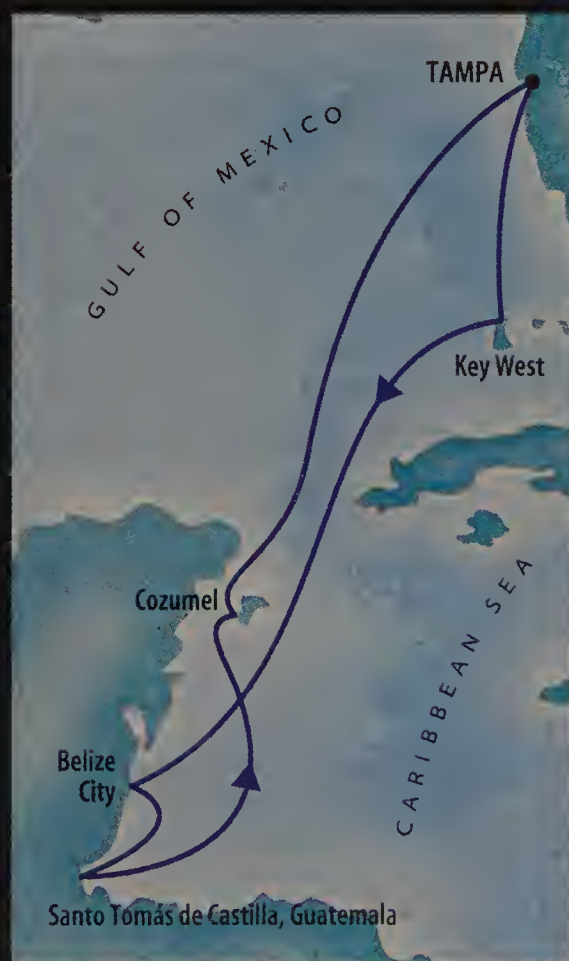


"Thanks Neil for getting it ALL right! After signing up almost thought I might have to miss the cruise because I was having a problem walking. Found that I missed out on very, very little compared to the wealth of everything that I did. Your organizational skills are amazing Neil, even down to the smallest detail... The seminars were just the best! But how could they miss with the amazing staff of instructors – the elite of the computer/photography world."

Dorothy LaPoint

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SIGNATURE OF EXCELLENCE

WebWonder

With the new FileMaker Pro 8.5, users can easily harness dynamic information on the Internet to maximize productivity.

These days,

the data you need to get your job done is often found on the Internet. The problem is: how to access that ever-changing Web-based information quickly, and then move it into applications to act upon it. Typically, this is a multi-step, time-consuming, and confusing process.

Now the FileMaker Web Viewer, a breakthrough feature in the new FileMaker Pro 8.5, unites the world of Web information with easy-to-use database solutions.

The FileMaker Web Viewer delivers Web data on demand within the user's database solution. It does all this and more by combining FileMaker database functionality with live Web data into one convenient and user-friendly solution.

With FileMaker Pro 8.5 and FileMaker Web Viewer, users need not store instantly obsolete information in

their databases. Rather, users can view the very latest Web data within the solution.

Good-to-go Web addresses

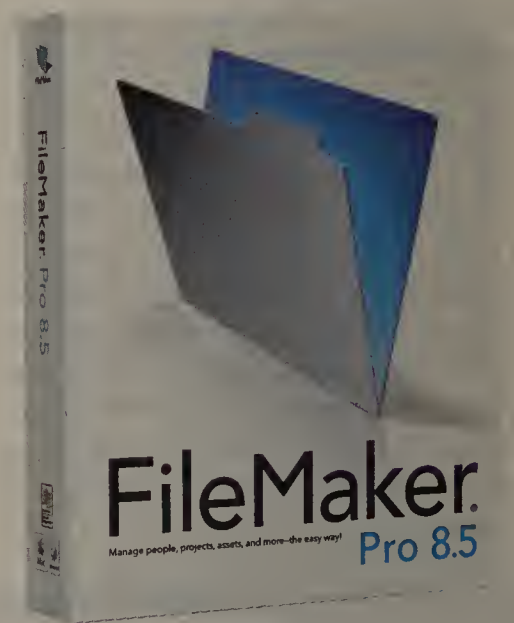
Working with FileMaker Web Viewer is easy. For example, FileMaker Web Viewer can calculate a URL for a map Web site based on information in the database's address and city fields. As the user browses each record in the database, FileMaker Web Viewer displays a map of the location specified in the current record.

The FileMaker Web Viewer contains predefined Web Addresses that are ready-to-use, including:

- **Maps:** Map the location of your sites or customer offices on the leading mapping sites.
- **Search:** See up-to-the-minute news on your customers and vendors, and search for information that impacts your organization.
- **Finance:** View the latest financial news.
- **Tracking:** Track packages that you shipped or are expecting to receive.
- **Web encyclopedia:** Get related articles from the world's largest multilingual, free-content encyclopedia on the Internet.

Users can easily add Web content using these predefined Web Addresses as well as customize the Web Viewer.

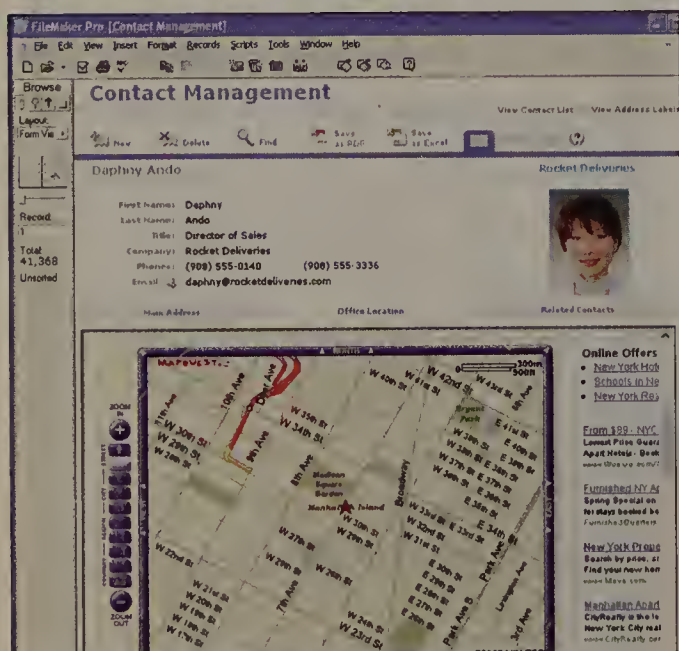
With FileMaker Pro 8.5's new FileMaker Web Viewer, you can map the location of your customers on the leading mapping sites.



Users can specify the information their database will use to retrieve data from the Web. Once it's set up, the Web Viewer retrieves up-to-date Web data for every record in the database.

So instead of separately accessing a Web site, searching for the desired Web data, and copying and pasting that information back into a different document or application, FileMaker Pro 8.5 allows users to simply link directly to the Web information they want, automatically. Creating links to specific Web sites from which users want to import real-time, current data is as simple as typing a URL into a dialog box that the FileMaker Web Viewer provides.

The applications of this astonishing new feature of FileMaker Pro 8.5 are almost limitless. For example, distributors of plumbing supplies for consumers and builders need to keep constant track of changes to features and prices of everything from sinks to faucets to showerheads. In the past, this



New FileMaker Pro 8.5: Web Data Delivered. On Demand.

meant copying the information in PDF form from the manufacturer's site back into the distributor's database. This consumed storage space as well as employees' time, and the information needed to be updated constantly.

With the FileMaker Web Viewer, the distributor just builds a link to the database file for the part in question. When an employee summons the file, a window pops up with all the latest pricing and feature information. The PDF no longer needs to be stored locally, clogging up the distributor's database. More importantly, the employee has instant access to the latest information needed to serve the customer immediately.

Eliminating the wait

FileMaker Web Viewer makes instant work of those regular calls from customers checking on the shipping status of their orders. By linking directly to popular shipping sites like Federal Express, UPS, the U.S. Postal Service, and others, the current shipping status of an order appears when the customer record is summoned from the FileMaker database.

That's a far cry from the traditional solution of copying the shipping information, leaving the database session to go out to the shipping site, pasting in the shipping information, then returning to the database session to answer the customer's query. And again, none of the Web-based information needs to be

Heretofore, checking on the competition's pricing meant plastering the conference room walls with newspaper ads from competitors, or doing exhaustive and repetitive searches through online comparative pricing services. Now retailers can have instant access to the information they need so that they can respond in real time to maintain a competitive edge.

Build it once, then let your database deliver Web info

With FileMaker Web Viewer, users can link directly to online comparative pricing services such as Froogle, Yahoo Shopping, or Shopping.com. As the user scrolls through the database or list of items for which he or she wants comparative pricing, the most current pricing information pops up instantly, right there with information on the item itself from inside the FileMaker database.

And for companies involved in transportation, shipping, or logistics, FileMaker Web Viewer helps speed people and packages to where they need to go. For example, taxi dispatchers are constantly bombarded by cabbies asking for directions to an address. With FileMaker

FileMaker Pro 8.5 allows you to link directly to the Web information you want.

The New FileMaker Pro 8.5 lets users easily manage, customize, and share information, whether they are working on Windows or Macintosh platforms. Among the productivity-boosting features of FileMaker Pro 8.5 are:

- Ability to connect your information to important Web data you rely on every day, such as search engine sites, location mapping sites, package tracking sites, and more.
- FileMaker Pro 8.5 is a Universal Application, optimized for Intel-based Macs and PowerPC Macs, as well as Windows XP and 2000.
- The new FileMaker Learning Center includes nearly 30 step-by-step video tutorials, how-to guides, and a wealth of other training aids available through the 30 FileMaker Starter Solutions to let users get up and running and be productive almost immediately.
- Capability to convert Microsoft Excel spreadsheets into versatile FileMaker databases with simple drag-and-drop functionality.
- Ability to store and manage just about any file type, including images, PDF documents, Microsoft Office files, movies—you name it.
- Ability to save information as Adobe PDF or Microsoft Excel documents for easy data sharing and exchange.

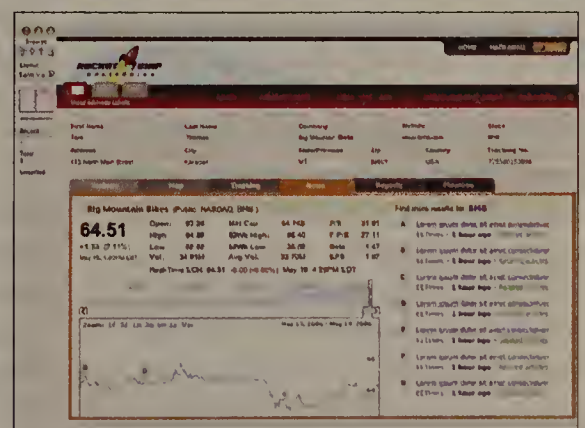
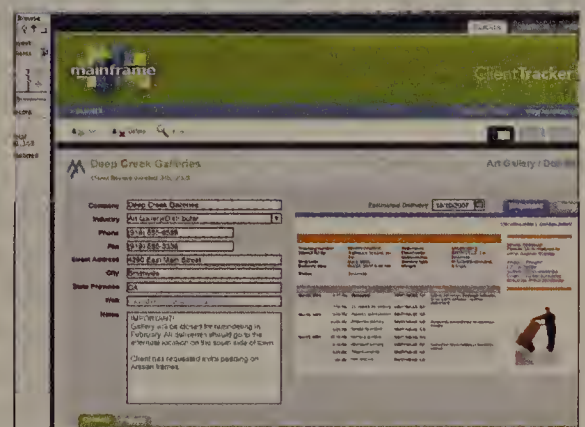
Web Viewer, the dispatcher can link the dispatching ticket system directly to MapQuest or Google Maps and then instantly deliver the correct directions to the cabbie with the electronic dispatch ticket.

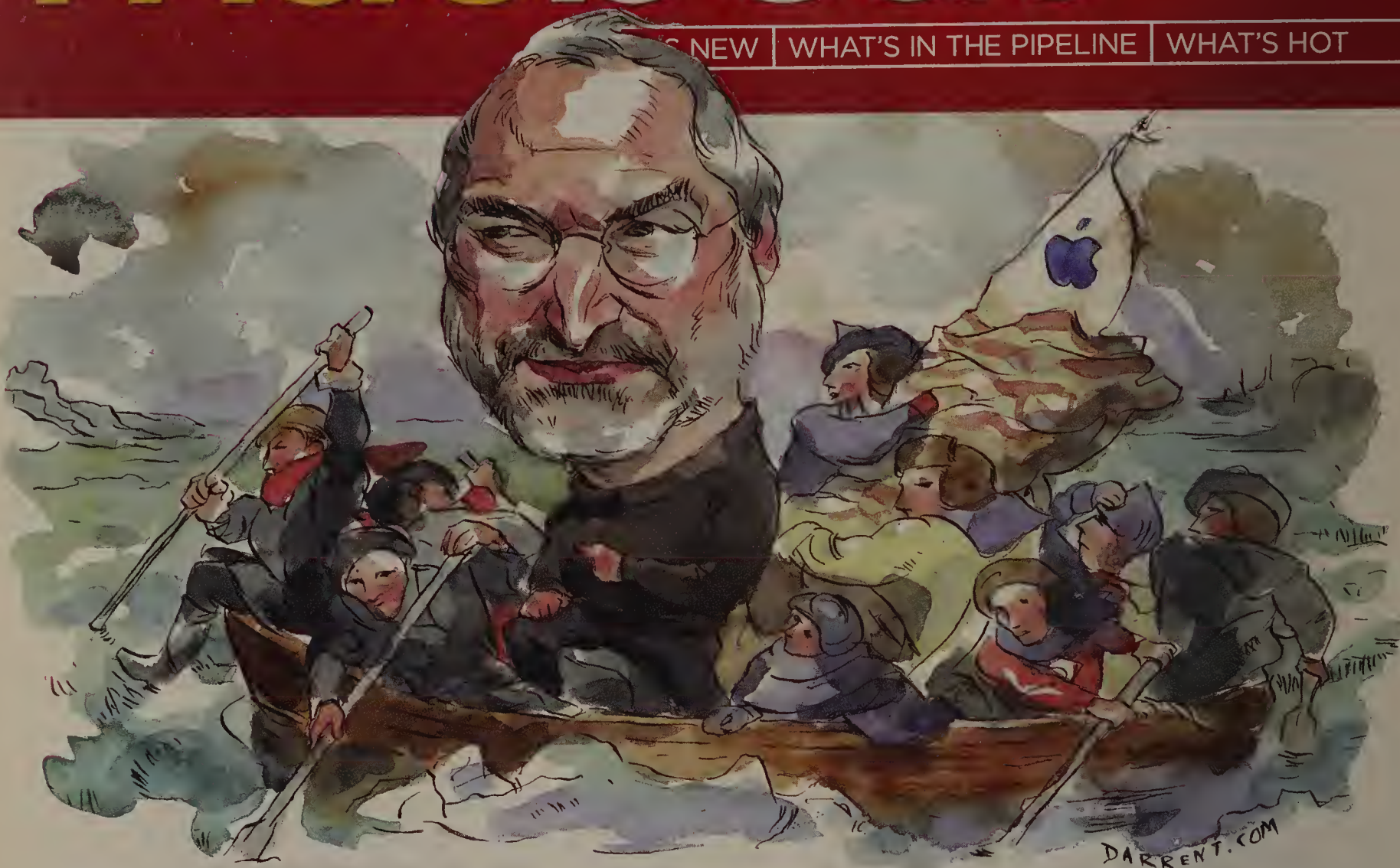
The productivity-enhancing uses of FileMaker Web Viewer in FileMaker Pro 8.5 are limited only by the imagination of users. For more information or to test-drive FileMaker Web Viewer, visit www.filemakertrial.com/macworld.

To view a video demonstration of FileMaker Web Viewer and see the Web Viewer Gallery of real-world solutions, visit www.filemakertrial.com/macworld.

stored in FileMaker when the user merely wants to access it. Users can even link individual customer records directly to the local weather or local sports information to give customer service staff conversational "ice breakers."

For retailers doing competitive pricing, the FileMaker Web Viewer can dramatically slash the time it takes to keep tabs on what the competition is doing.





Crossing Over to Intel

A Year into the Switch, Analysts and Developers See Move Going Well

BY JIM DALRYMPLE

In June 2005, Steve Jobs announced that Apple would start using Intel processors as the brains inside Macs. The change wasn't going to happen overnight, but one year later, Apple has already transitioned most of its hardware to the new architecture. All major developers for the platform have committed to making their applications run natively on the new chips, and analysts believe the transition has been a success so far—all told, it has been a good year for a company in the midst of a major shift in its business.

"The transition is most impressive because of the complete lack of disruption that it has caused," says Van L. Baker, a vice president of research at technology research firm Gartner. "It's been a pretty painless transition."

Technology Business Research analyst Tim Deal agrees. "The transition has occurred faster than I thought it would, and with fewer problems than I had anticipated."

Apple kicked off 2006 with an Intel-based iMac and a 15-inch MacBook Pro. The new machines came a full six months earlier than most people expected to see Intel Macs, signaling a good start to the transition for Apple. A month later, the consumer-level Mac mini was the next piece of hardware to make the jump to Intel chips. Rounding out Apple's Intel hardware releases was one of the most anticipated of all—the MacBook—in May. With a 13-inch screen, the MacBook is Apple's replacement for the two iBook models and the 12-inch PowerBook.

So after one year, Apple has successfully moved its consumer desktop line and its entire portable line to the new chips. All that remains are servers and high-end desktop machines—and analysts expect we won't have long to wait for those.

"I think the servers and desktops are held up because Apple is waiting for Intel to give them better performance with some new chips," says Baker. "Those chips should be coming along very shortly now." Many people expect Apple to release at least one of those pieces during August's Worldwide Developers Conference.

Adobe, Microsoft, and Quark

One of the major concerns for customers was how long they would have to wait for Intel-native (or Universal) versions of their favorite applications. Of particular

concern were Adobe Photoshop, Microsoft Office, and QuarkXPress—staples of business and professional users on the platform. While all the companies were quick to pledge support, details on when users could expect to see the Universal applications have been scarce.

Adobe plans to update its Creative Suite, which includes Photoshop, Illustrator, InDesign, GoLive, and Acrobat, and says that it's currently working on or evaluating transition plans for After Effects and InCopy, among other applications.

Adobe CEO Bruce Chizen has said publicly that Adobe expects to ship Intel-native versions of its apps in the spring of 2007.

Microsoft is also working on an Intel-native version of Office, and the company signed a new technology agreement with Apple that will last for the next five years. Microsoft will not be making the existing version of Office Universal, but will instead focus that effort on the next version of Office.

And Quark recently released QuarkXPress 7 as a PowerPC-only application, but the company said that an Intel version would be available this year.

Even though some of the biggest applications for Intel Macs may still be about a year away, analysts don't believe that will stall the transition for Apple.

Few Developer Problems

Many developers were left wondering how their applications would work under the new Intel architecture—and just as importantly, they wondered how much work it would take to update their applications to run natively on Intel-based Macs.

"I was really surprised how easy it was," says John Casasanta, president of Inventive Software (makers of the clipboard utility iClip). "When Steve [Jobs] said it was just a matter of clicking the check box, that's pretty much what it was for iClip Lite. iClip has been a bit more of a transition for us because it is a Carbon application and we rely on some third-party dependencies."

It is the issue of dependencies on other applications that has caused some devel-

opers grief over the last few months, but Casasanta says that the transition is not that bad. Currently developing the next version of iClip, Inventive Software plans to release an Intel-native version in September, after beta testing is complete.

Splasm Software cofounder Keith Gugliotto says that he's had pretty much the same experience with his Viddy Up (formerly Podner) video-encoding software. While there were a few problems, only a few hours were required to port the application to an Intel-native version.

"There really weren't that many bad things about it—Apple had already done all the work," says Gugliotto. "[Apple] kept up OS X on Intel hardware and a system was devised to send out transition kits to developers."

This early planning by Apple is seen as a positive sign by analysts. "The fact

that [Apple] ran OS X on Intel processors for four years before [the company] ever brought it out shows the amount of energy that [Apple] invested in the transition," says Gartner's Baker.

Inventive Software's Casasanta says that Apple has been doing a lot of things right lately. From making Xcode (Apple's developer tools) free to making Intel machines available to developers to test their software, the process of porting to Intel has been pretty seamless.

After a year, Apple has moved most Macs to Intel chips.

A Mac developer for the last 20 years, Casasanta knows about transitions. He has been around for the PowerPC, OS X, and Intel transitions. This one was the easiest, he says.

Boot Camp and Virtualization

Shortly after Apple brought its Intel systems to market, enterprising people in the community began working on ways to get Microsoft Windows running on the hardware. Apple significantly helped that cause with the beta release of Boot Camp, a new application that allows users to easily turn their Intel Macs into dual-boot systems.

While Apple has said publicly that a final version of Boot Camp would be part of OS X 10.5 (Leopard), what isn't clear is whether it will remain the same—that is, requiring a reboot, or letting users run Windows applications alongside their Mac applications (much like Virtual PC did for PowerPC-based Macs).

Whatever Apple decides to do, however, its software won't be the only option. Shortly after the release of Boot Camp, Parallels released Parallels Desktop for Mac, software that lets users run other operating systems (many flavors of Windows and Linux) at the same time as Mac OS X. Unlike PC-emulation software (Virtual PC, for example), Parallels Desktop takes advantage of the virtualization hardware on the Intel chip to run programs faster than they'd run under emulation. The developer characterizes performance as "near native" speeds.

The opportunity to run Windows on the Mac is exciting to many Mac users, and analysts don't believe there is much fear of companies stopping the creation of Mac software because Macs can now run Windows. Besides the fact that it doesn't make economic sense to buy a Mac just to run Windows (you still need to buy a copy of Windows), they believe OS X is ahead of Windows as an operating system.

"OS X is fast and stable," says Gartner's Baker. "Most of the features we are going to see in [Windows] Vista have been in OS X for quite some time."

Regardless of how Boot Camp is implemented in Leopard, developers like Inventive's John Casasanta aren't going anywhere. He says that he believes the transition was good for Apple and himself, as a developer on the platform.

"We are Mac-only and that's it," says Casasanta. "There is plenty of business to be had in this market. From a business point of view and from the point of view of what I love doing, there are a lot of avenues to prosper as a Macintosh developer."

JIM DALRYMPLE is Macworld.com's news director.



WHAT WE HOPE MAC OS X 10.5 INCLUDES

10 Wishes for Leopard

When Steve Jobs takes the stage in San Francisco at this year's Worldwide Developers Conference (WWDC), he'll offer attendees a glimpse of the next major release of OS X, code-named Leopard. Because Apple has been typically tight-lipped about what to expect from Leopard, we have no idea what awaits us that day. But we can suggest a number of changes we'd like to see.

1. Smart Locations

My MacBook can intuit where it is, based mostly on the name of the wireless base station it's connected to. It just can't do anything with that information. If my MacBook knows it's at home, it should be able to set my home printer as the default, update my iChat status to "At Home," mount my local file server, run an AppleScript or four, and even change my default mail server.—JASON SNELL

2. Better Media Center Capabilities

A true media center should record television the way TiVo does, with a guide that is available in countries outside of the United States; stream video and audio wirelessly from multiple computers; and play DVDs, music, slide shows, and videos with ease. You should also be able to buy songs, videos, and movies directly within the interface.—JIM DALRYMPLE

3. Windows Compatibility and Integration

Apple should be commended for Boot Camp. That said, it's just a Band-Aid, and having to completely shut down one operating system to use another is far from elegant. If Leopard is going to welcome Windows to the Mac, make it quicker to move between OSes with a feature similar to OS X's fast user switching. Let users easily move files between the two operating systems. Make it possible for applications in each OS to share data (such as items copied to the Clipboard). And make Disk Utility support Windows-compatible formats.—CHRISTOPHER BREEN

4. Built-In Launcher

Programs such as Butler, LaunchBar, and Quicksilver make it very easy to

launch applications, open documents, and do other file-related tasks. Spotlight *can* be used as a rudimentary launcher, but it's slow and gives you too many search results. Apple should create a new launcher shortcut key, and have it access a restricted version of the Spotlight index that looks only for file names. A preference pane could let you



specify the types of things you want the ability to launch, be they applications, documents, iTunes, or Address Book contacts.—ROB GRIFFITHS

5. Finder Fixes

The Finder is the last bit of legacy code in the OS, and it's showing its age. I'd like to see a number of improvements—a sortable column-view window, easily customizable contextual menus, selectable colors for column-view window backgrounds, a way to browse Spotlight metadata directly in the Finder, and more powerful smart folders (to name a few).—RG

6. Restore More

It's not often that I wish for Windows features on my Mac, but I would like to see Apple implement a system restore feature in OS X. This would "rewind"

your computer to points where it was happy and stable. Should your data become corrupt, you could restore the Mac to a backed-up stage.—CB

7. Expand Disk Utility's Powers

While Disk Utility is capable of repairing disks, it can really fix only simple errors. It'd be great if Apple added more power to Disk Utility. You'd still need to reboot from another drive (or the installer CD), but that's better than relying on a third-party application. This is especially important as both OS X and the hardware that we use to run it keeps changing—Apple would have a much easier time staying current. I'd also like to see Disk Utility gain the ability to create and resize partitions on-the-fly.—RG

8. More from Mail

Apple's Mail gets better with each iteration, and I'd like the next version to offer more extensive rules—both conditions and actions—so power users can better filter and sort their mail. Adding a Change Subject action would allow you to automatically tag, file, and forward incoming messages.

And the Accounts preference could also use some work.—CB

9. Tabbed Terminal

Even on a large screen, keeping multiple Terminal windows straight can be problematic, especially when they have identical backgrounds and font colors. I'd love OS X 10.5's Terminal to offer the option for tabbed Terminal windows.—RG

10. Expand iChat

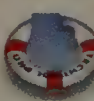
iChat needs some serious usability improvements. I'd like the ability to display multiple chats in one window via a tabbed interface. I'd also like iChat to be able to save audio- and video-chat files. Most importantly, iChat needs to connect to other chat services while maintaining its strong links with AOL's Instant Messenger network.—JS



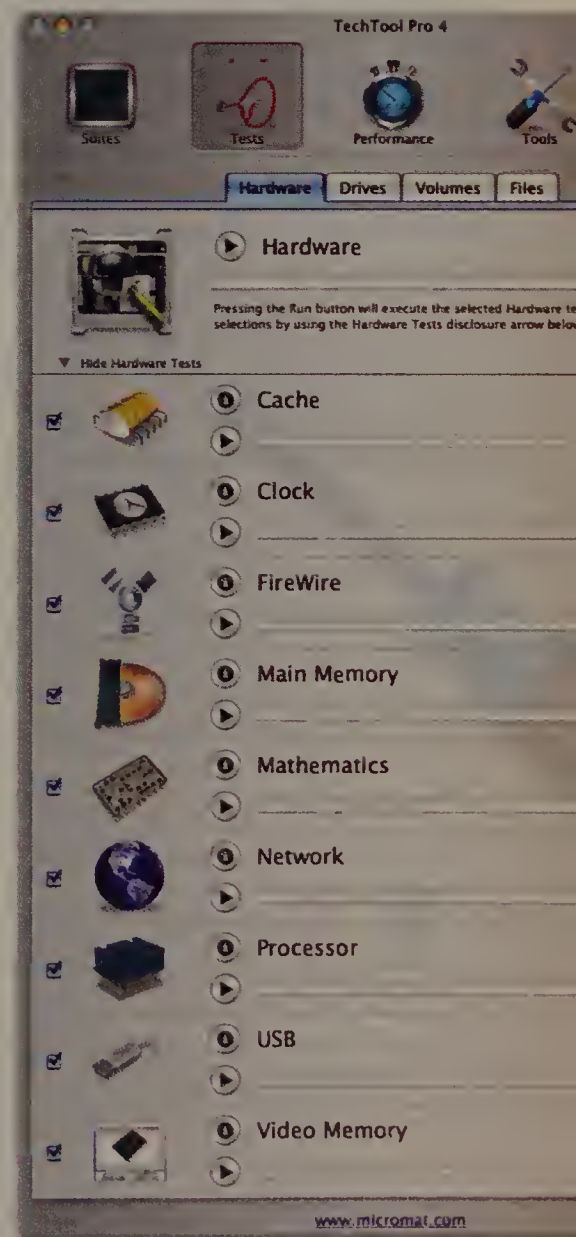
Intel Mac
Make sure your system works.

The complete Macintosh problem solving utility.
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Why throw away your money on a multitude of utilities that force you to learn different interfaces and deal with a variety of companies and/or different products? Micromat gives you everything you need in one box—for far less money. TechTool Pro is a complete Macintosh repair shop in a box. In fact, it's so good that Apple includes a copy of its sibling, TechTool Deluxe, in its AppleCare Protection Plan. If you experience freezes, kernel panics, or other problems, TechTool Pro can help you get your computer running smoothly again. Nothing else even comes close to TechTool Pro! Use TechTool Pro for:

-  **Diagnostics and Repair**
Ensure that your computer keeps running its best.
-  **Optimization**
Enhance the overall performance and simplify file layout of your hard drives.
-  **Data Recovery**
Recover important data from corrupted hard drives.
-  **Safety**
Protect your computer and hard drives automatically in the background.
-  **eDrive**
Create an emergency startup partition so TechTool Pro is always available.

TechTool Pro is a feature-packed release of the most comprehensive diagnostic, repair, and maintenance utility of all time! A must-have Macintosh application, this utility from Micromat is truly the one indispensable product you need to ensure your Mac is always trouble free.



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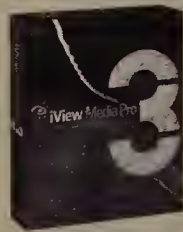
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NEWS IN BRIEF

Apple Adds Education iMac

Replacing the eMac—the only CRT-based Mac left in Apple's lineup—Apple has begun offering educational institutions an \$899 17-inch iMac. This version of the Core Duo iMac loses Bluetooth connectivity, a DVD-burning SuperDrive, and the Apple Remote. Also, it uses Intel's GMA 950 integrated graphics set instead of an ATI Radeon graphics processor, and has an 80GB, instead of a 160GB, hard drive.

**Microsoft Buys iView**

Software giant Microsoft announced that it has purchased iView Multimedia, makers of the MediaPro digital-asset-management application for OS X and Windows. An FAQ on the iView Web site notes that Microsoft will continue to support and sell current versions of the iView Mac products but is vague about the fate of those products, indicating that Microsoft "will offer upgrade pricing to all Mac users of future products that may be available based on the iView products."

IBM Runs Chip at 500GHz

IBM researchers have pushed a microprocessor to speeds of 500GHz. The researchers built a prototype silicon-germanium (SiGe) chip that ran at 350GHz at room temperature, and then used liquid helium to freeze the chip to -451 degrees Fahrenheit—a few degrees above absolute zero. With no risk of melting the chip, they were able to push it to 500GHz.

**Belgium Moves toward OpenDocument Format**

In another blow to the supremacy of Microsoft's Office franchise, Belgium became the second governmental body (after the state of Massachusetts) to approve the use of the OpenDocument Format (ODF), a free XML file format, as a way to exchange government documents. Although Belgium is a country of just 10 million citizens, its embrace of ODF could have a big ripple effect. Its capital, Brussels, is the headquarters of the European Union, making it an important political center in Europe.

GOOGLE WOWS GEEKS AT CONFERENCE

Mac Map Makers

In June, more than 700 cartographers, developers, and entrepreneurs flocked to San Jose for Where 2.0, a conference by publisher O'Reilly on "the future of mapping and local search." I spent a day at the conference checking out the latest technology and was pleased by the strong importance paid to the Mac.

First, John Hanke, director of Google Earth and Google Maps, showed off the latest features in Google Earth (earth.google.com). At last year's conference, Google debuted the program and said that Mac users would have to wait to enjoy it. This year, Hanke said that Google Earth "screams" on a MacBook.

As someone who loves maps, I enjoy seeing new features in programs that push the limits of digital mapping, and Google is at the forefront of this technology.



John Hanke

Hanke showed off some of Google Earth's main new features, which include updated satellite data and much more detail for places in the world that didn't have close-up information

before. He said that Google Earth now covers 20 percent of the surface of the earth and includes a third of the world's population.

Presenting alongside Hanke was Brad Schell, the founder of AtLast Software. His company created the 3-D-modeling program SketchUp, which was acquired by Google in March of 2006. Soon after, Google released a free version for Windows, but at the conference, Schell showed off the newly released free Mac version of Google SketchUp (sketchup.google.com).

By that point, I was wowed with the sheer ability and simplicity of Google Earth and Google SketchUp. When I got home, I immediately started working on a 3-D model of my house.—CYRUS FARIVAR

COMPOSITING APP GAINS INTEL SUPPORT, SEES HUGE PRICE DROP

Apple Updates Shake

Although many Mac users have never heard of Apple's Shake application, the company has given people two good reasons to stand up and take notice of the professional video-compositing software. The recently released Shake 4.1 update brings native Intel support, as well as a dramatic price slash—from \$2,999 to \$499. Existing users can upgrade to version 4.1 for \$49. (And with the Linux version remaining at \$4,999, Apple may convince more people to buy Macs, too.)

"We wanted to make Shake accessible to our 500,000 Final Cut Pro users out

there," says Kirk Paulsen, Apple's senior director of professional applications marketing. "At \$499, we have really priced Shake in the range of a plug-in for Final Cut Pro."

Shake has advanced features such as 3-D multiplane compositing, 32-bit Keylight and Primatte keying, Optical Flow image processing, integration with Final Cut Pro 5, and a powerful scripting language. Television and film pros use the application to incorporate advanced visual effects into their work—Shake-enhanced movies include *King Kong*, *Mission: Impossible 3*, *Pirates of the Caribbean: Dead Man's Chest*, and *Poseidon*.

The new Universal release runs natively on both PowerPC and Intel-based Macs. And Apple says that Shake 4.1 is as much as 3.5 times faster on a 17-inch 2.16GHz MacBook Pro than on a 17-inch 1.67GHz PowerBook G4.—PETER COHEN AND JIM DALRYMPLE



GARAGEBAND IS PUSHING COMPANIES TO AIM MAINSTREAM

Music for All

When Apple released GarageBand in 2004, the music-creation program aimed at consumers seemed like just another component in the iLife suite of multimedia applications. But a few years after GarageBand's release, many professional audio-software and -hardware makers have introduced consumer products of their own—and few make any secret of the fact that it was GarageBand that inspired them to reach out to this new audience.

"GarageBand is bringing music to the masses in a way that is very easy," says Chris Bristol, senior vice president and general manager of Roland's U.S. operations (www.rolandus.com). "You feel that you are in a creative mode right away. There are always people that want higher-quality recording, but the basic fundamentals need to be delivered in a simple package, and that's what GarageBand does."

Although Roland's Boss and Edirol brands are household names with professional musicians, the company also has a slew of consumer products. "It's a good idea for us to get our technology in a less-expensive format that more people can use," says Bristol.

And analysts say that Roland is hardly the only company to take this approach. "I think [GarageBand] was a bit of a wake-up call for the high-end music industry," says Mike McGuire, an analyst with technology market research firm Gartner. "I think [the music industry is] seeing a moment of inspiration, not to compete, but to make their stuff more intuitive, like Apple."

Take Blue Microphones (www.bluemic.com), a company that typically makes mikes for recording and touring musicians. It recently introduced a \$149 microphone called the Snowball, bringing Blue into a market it never thought it would touch.

The Snowball was conceived directly because of GarageBand, says Blue Microphones president, Skipper Wise. Wise's daughter was using GarageBand and a USB microphone to make music on her Mac. Noticing the lack of quality in the recording, Wise decided to create an inexpensive mike, using what he had learned making \$12,000 mikes at work.

"We are really more of a higher-end company, but when you do something of a higher quality and then you trickle it down to a price point of the Snowball, you can apply all of the things you know work on the high-end products," says Wise.

Indeed, that's been much of the secret to GarageBand's success. While the program is easy

to use, it still delivers powerful features, thanks in large part to its use of the same core technologies that Apple uses in the professional-level Logic music software.

"We started from scratch and made the best application we could for the novice user," says Xander Soren, Apple's senior product line manager for consumer audio applications. "We are good at making it available to everybody, by having a price that makes sense and making it achievable for the average user."

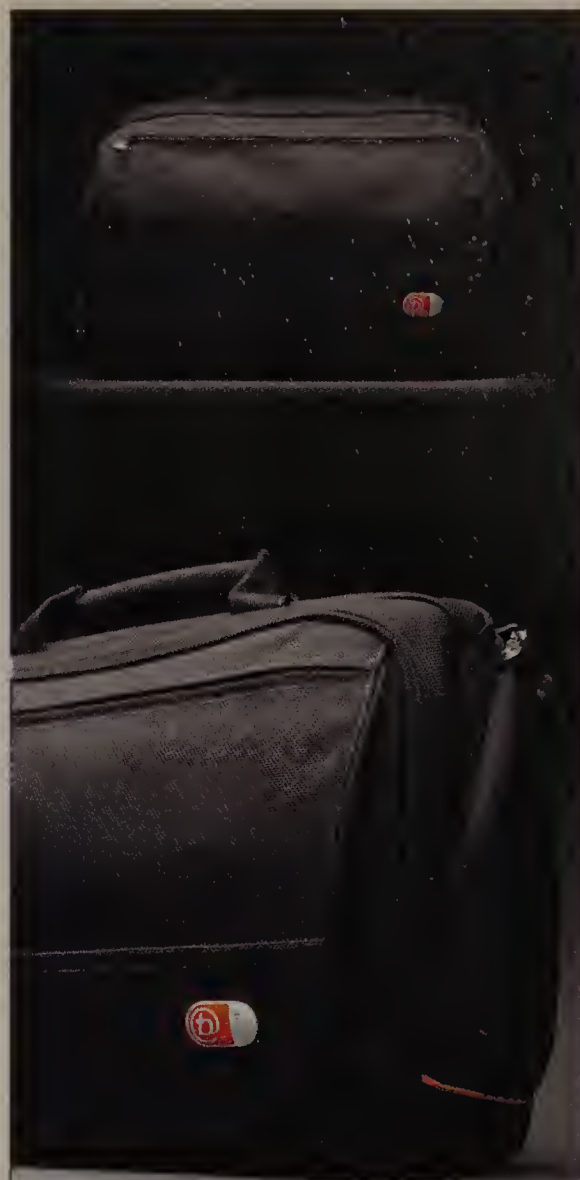
Gartner's McGuire agrees. "GarageBand makes it so easy to make music with just a few clicks and some samples. Even some pros are taking advantage of these features in GarageBand to do quick things."

And that's why companies at the top end of the music industry are feeling GarageBand's influence. Athan Billias, director of marketing for tech products at industry giant Yamaha (www.yamaha.com), recalls that years ago, making a record cost a lot of money—so much so that amateurs were shut out of the process. That's not the case anymore, both because of price and easy-to-use products.

"That is the challenge—making the technology transparent," Billias says. "That is what the Mac experience is all about in my mind."

It is trends like these that Billias keeps in mind when Yamaha sits down to create a new product. Incorporating the company's knowledge from its high-end products into different levels of products—such as the MW10 and MW12 USB mixers—for all users. "Making it simple is really hard," adds Billias.

Yamaha has remained successful throughout the years because of its philosophy when creating new products. "The first thing we had to do [was] realize that people are not interested in Yamaha—they are interested in what the products can do for them. If you keep this in mind, you can't go wrong," Billias says. "Apple focuses on the customer experience: 'Plug it in and it works.' That's how we do things, too." —JIM DALRYMPLE



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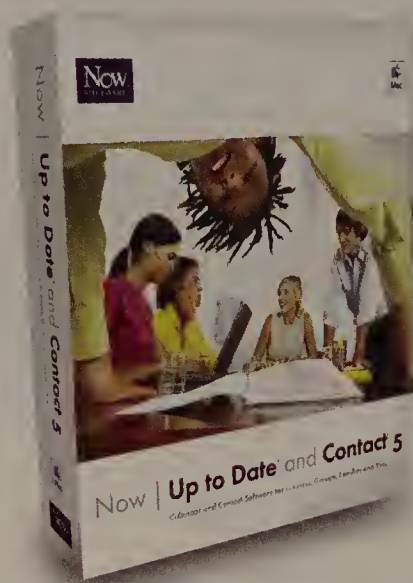
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APPLE TECHNOLOGY HELPED BRING SOCCER UPDATES TO MILLIONS

Macs Go to the World Cup

Chances are pretty good that if you watched highlights from the 2006 FIFA World Cup matches on television, you witnessed Apple technology hard at work. The Host Broadcast Service (HBS)—a collection of production groups brought together specifically for the biggest event of the world's most popular sport—delivered highlight clips to 50 networks around the world as the games happened. To accomplish this, HBS used four Power Mac G5s, Gallery's PictureReady video software, and AJA Kona cards with DVCPRO HD 1080i50 video recorded into a 20TB Apple Xsan.

From its master control center to the dozens of cameras at each match, the production team was responsible for everything from managing the feeds coming back to the Munich headquarters to quickly delivering highlights to mobile phones within minutes of the action happening on the field.

Three Final Cut Pro systems monitored the games being played and recorded—if the production team saw something highlight-worthy, a 15-second clip was immediately edited and exported through QuickTime. These clips were then made available to network subscribers.

The Japanese television station NHK also used Apple technology to produce its



HD World Cup coverage. With the same setup it used to broadcast the Torino Olympics, NHK had five Power Mac G5s and the same PictureReady software. The five feeds were recorded in DVCPRO HD 1080i50 directly to a 36TB Xsan system. One Power Mac with Final Cut Pro was used to create broadcast pieces, and a second machine packaged the content that was ready for broadcast.

Finally, the second largest Mexican broadcaster, TV Azteca, adopted a slightly different approach, using five MacBook Pros with Matrox MXO video-output hardware and HDV footage to deliver packages from venues around Germany.

Editors for TV Azteca shot on location, edited the content in Final Cut Pro, and then connected the Matrox MXO to an SDI or HDSDI satellite link that sent the final edited project from the field to the TV Azteca operations center.—JIM DALRYMPLE



PRODUCTIVITY
BEAT

Business Card Composer 4.0, from BeLight Software (www.belightsoft.com): Design program for business cards includes 100 new card designs and improved iPhoto integration (\$35; upgrade, free).

Meetro, from Meetroduction (www.meetro.com): New instant-messaging client combines physical location with chatting (free).

Thunderbird 1.5.0.4, from The Mozilla Foundation (www.mozilla.com): The popular open-source e-mail client improves stability and is now a Universal program (free).



MULTIMEDIA
BEAT

Peak Pro 5.2, from BIAS (www.bias-inc.com): Two-channel audio-editing software is now available in a Universal version and no longer requires a USB key (\$599; upgrade, free).

XLR8 ProView USB, from Daystar Technology (www.daystar-tech.com): USB 2.0 video-capture hardware works with analog video sources (\$99).

My Co-Writer, from Drums on Demand (www.drumsondemand.com): This new songwriting tool includes original music tracks (\$33 to \$130).

EUROPEAN DISCONTENT AGAINST APPLE'S DRM SPREADING

iTunes' Woes

While some consumers in the United States have complained about Apple's FairPlay digital rights management (DRM) technology, pressure is mounting more broadly in Europe for Apple to loosen the ties between its iTunes Music Store (iTMS) and its iPod music players.

Norway's consumer ombudsman has asked Apple to change some terms of agreement in its iTMS, and to defend its DRM policy. The Consumer Council of Norway, an independent organization that represents consumers, asked the ombudsman to intervene. Similar agencies in Denmark and Sweden are expected to ask Apple to change the terms of its iTunes agreement, as well.

Earlier this year, the Consumer Council asked the ombudsman in Norway to rule that Apple's DRM violates the Norwegian Copyright Act because it hinders users from

playing music that they buy on the music player of their choice. "We consider this not to be what Apple claims, which is to restrict illegal copying, but that it's used as a tool to lock the consumer to Apple's product," said Torgeir Waterhouse, a senior advisor on the Consumer Council.

He said that while the ombudsman agreed with the Consumer Council's complaint, it also recognized that a change to Apple's DRM policy constitutes a major change in the company's business model; therefore, the ombudsman has asked Apple to offer its view on its

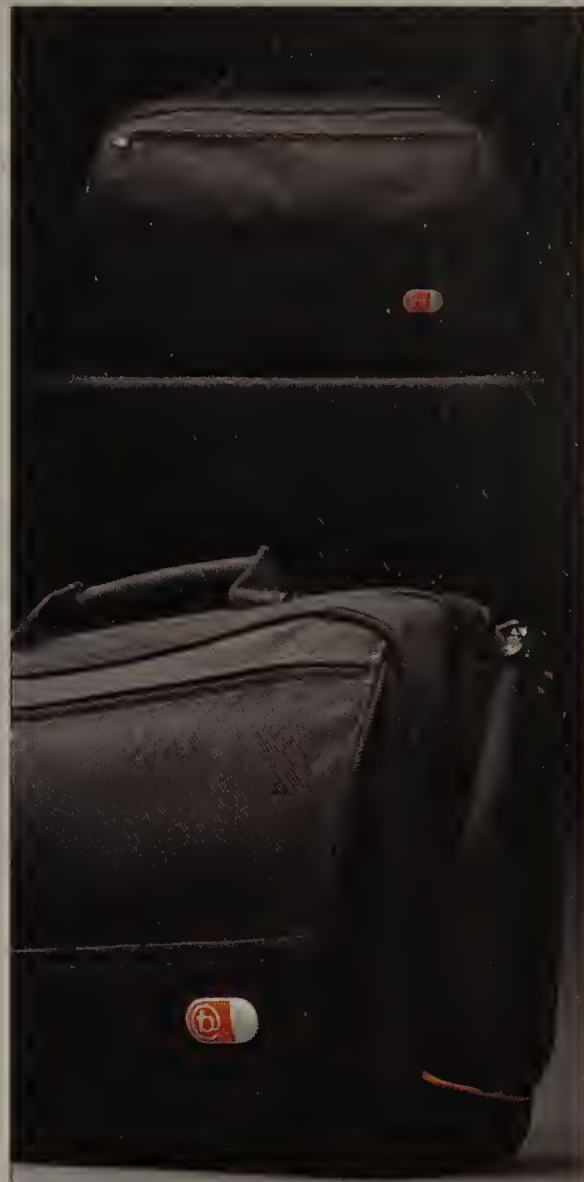
DRM policy before a formal ruling is made on the issue.

The ombudsman ruled recently that some conditions Apple sets as part of the iTunes purchase agreement violate Norwegian laws, and ordered Apple to change those terms or face fines. The terms in question include Apple's upholding the right to change the terms of a purchase after the purchase is made, and disclaiming any responsibility for damage that iTunes may cause to users' computers. The countries involved aren't focused only on Apple's policies, however. The Consumer Council is encouraging the ombudsman to investigate other music stores as well, in an effort to change the way that digital music is sold and protected.

Such activities aren't limited to Scandinavia. In a hearing in front of the U.K. House of Commons Select Committee for Cul-

ture, the British Phonographic Institute argued that Apple's dominance of the digital music industry is unhealthy, and called on Apple to allow customers to buy music from iTunes and play it on other players.

And earlier this year, France proposed a law that would require Apple to open its DRM so that makers of other players could allow iTunes songs to be played on their devices. The final law that passed softened the potential blow to Apple by allowing companies to keep their DRM technology private.—NANCY GOHRING



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IMAGING BEAT

FlickrExport 2.0, from Connected Flow (www.connectedflow.com): Updated software for sending photos directly from iPhoto to Flickr now supports uploading to existing sets of images and can copy titles and descriptions back to iPhoto if they've changed (£12).

Mac Uploader, from Riya (www.riya.com): Mac uploading tool for the face-recognition-based online photo service (free).

Art Collector 1.0, from Specere (specere.net): New tool helps users add album art to iTunes library tracks (\$8).



HARDWARE BEAT

SeriTek 2SE2-E, from FirmTek (www.firmtek.com): PCI Express card has two external SATA ports for ultrafast data transfer (\$100).

Card Drive U510, from PQI (www.pqimemory.com): The new addition to PQI's credit-card-size flash-drive line will hold 16GB (pricing not set).

Pocket Drive, from Seagate (www.seagate.com): This USB-powered 8GB hard drive is the size of a hockey puck and can fit in a shirt pocket (\$149).

USB 2.0 Universal Drive Adapter, from Newer Technology (newerotech.com): This adapter converts any IDE or ATA drive to USB 2.0 (\$25).



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MiniDV Camcorders

A Wide Spectrum of Features and Prices for a Range of Shooters

BY RICHARD BAGULEY

Choosing a camcorder can be a tricky business. There are hundreds of models out there, from tiny pocket-size models to the hulking shoulder-mounted behemoths that the pros use. Our guide to choosing a camcorder (see “Digital Video Essentials,” page 40) will help you determine which type of camcorder is best for you.

And to help you choose a specific model, we tested six camcorders that use the popular MiniDV tape format to record digital video and audio, and that range in price from \$380 to \$1,300. We judged the quality of video shot in both normal and low-light situations, as well as the quality of the still images that these camcorders captured.

We evaluated the Canon Elura 100, the JVC GR-D396US and GR-X5US, the Panasonic PV-GS300 and PV-GS500, and the Sony DCR-HC36 MiniDV Handycam; our top pick is the \$1,000 Panasonic PV-GS500.

The quality of the video these camcorders produced varied widely. Under good lighting conditions (such as daylight), all of them produced video that looked better than that of their older analog video cousins—video from the more expensive models was superior to that of less expensive models, but none of the cameras produced unwatchable video. However, this changed when we tested the camcorders in low light (such as typical indoor lighting): while the quality of all the camcorders’ video dropped, the JVC GR-D396US and the Sony DCR-HC36 both produced video that was especially grainy and had pale, wan colors. So they wouldn’t be good picks for party people who like to hang around in cool, dark places.

Canon Elura 100

The Elura 100 is small both in size and in price: in fact, at 2.2 by 3.0 by 4.3 inches, it’s the smallest camcorder we looked at, and at \$400, it’s also among the least expensive. Although it’s not quite pocket-size, it’s compact and light enough to fit into a purse, so it won’t drag you down.



Canon Elura 100

Despite that, the Elura 100 fits comfortably in the hand, and the controls are in the right spots for easy shooting. The zoom control for its 20× optical zoom lens sits under the index finger (the digital zoom goes up to 800×, but the image quality is so bad at that level that the digital zoom is unusable), and the Record button is under the thumb. It’s easy to switch the camcorder from Camera mode to Player mode, with the mode dial located around the Record button. Although most of the controls are accessed through an on-screen menu (which is controlled with the four-way joystick on the back of the camcorder), there are some buttons for features such as the wide-screen mode and for turning off the LCD backlight. There’s also a switch for going into Program mode or Easy mode, which puts most settings at Automatic for point-and-shoot use.

But it feels as though Canon cut corners to keep the Elura 100 inexpensive. The case

doesn’t feel hardy enough to stand up to rough treatment—the plastic port covers are attached by small pieces of plastic that could easily get torn off.

The 2.7-inch LCD screen is clear and bright, and (unlike the LCDs of some other camcorders we looked at) it’s a true wide-screen display: when you’re shooting in the 16:9 wide-screen mode, video fills the entire screen. The Elura 100 is also unusual for a budget camcorder in that it shoots true 16:9 wide-aspect video; many other camcorders just trim the top and bottom parts of the video, but the CCD image sensor in the Elura 100 is a true wide-screen sensor, which makes for higher resolution.

However, the video quality was a little disappointing. In our tests with studio lighting, we saw video that had reasonable detail but lacked vivid colors. Bright colors looked washed out, and subtle color differences were difficult to distinguish. In low light, problems were even more obvious,

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with some colors almost vanishing in a gray haze. You can add more light by using the two built-in LEDs, but these provide light only at a range of a few feet. The video didn't look unattractive in good lighting—it just wasn't as good as the video of more-expensive models.

We also noticed a quiet but rather distracting noise while recording. Although the stereo microphones on the top of the case picked up good-quality sound, they also picked up the motor noise, which was audible in quiet parts of recordings.

The battery life of the Elura 100 was excellent: a fully charged battery lasted just over 148 minutes, long enough for an extended trip. It's a pity, though, that the video quality wasn't better, as that's our only serious complaint about what is otherwise an excellent low-cost camcorder.

The Canon Elura 100 is a good choice for budget shooters; although the image quality isn't great, it's a compact, easy-to-use camera that won't confuse novice filmmakers.

JVC GR-D396US

The old saying "You get what you pay for" certainly applies to the JVC GR-D396US. It's the least-expensive camcorder we looked at, and the video it captured was distinctly lackluster. In addition, while the camcorder had good battery life and was comfortable to use, several other issues further limit its appeal.



The GR-D396US's main problem is its video quality. It was at the bottom of the heap in our tests, in both normal and low-light conditions: video colors lacked bite, and fine details got lost in haze. The low-light video was particularly unappealing; it looked almost monochrome, with even brightly colored objects looking pale and unattractive.

Among the positive factors, JVC throws in a second battery, and the battery life was already more than respectable: in our tests, a single battery lasted 106 minutes. The GR-D396US's lens also has the longest opti-

cal zoom of the tested camcorders: at 32×, it lets you get much closer to distant objects than the 20× lenses of the Sony DCR-HC36 MiniDV Handycam and the Canon Elura 100. Unfortunately, the lens also has problems: at longer zoom settings, the edges of images became rather fuzzy and indistinct, and because there's no optical image stabilization, the smallest camera movement leads to jittery, unpleasant-looking video.

The camcorder feels comfortable in the hand, with a tall, thin design that works well for people with large hands. The Record button sits under the thumb, and the zoom control is under the index finger. The Snapshot button (for taking still images) is right behind the zoom control: the GR-D396US can capture still images at a maximum resolution of only 640 by 480, to an SD Card; as with the Sony DCR-HC36, this hardly seems worth the bother (however, the Panasonic PV-GS500's low-resolution still camera took unexpectedly good pictures). Other control buttons are located underneath the 2.5-inch LCD, and a large Auto button above the screen toggles between the Automatic and Manual modes. However, the latter name is somewhat misleading: this camcorder doesn't provide a full manual mode. Instead, you get some limited control over exposure,

continues

MINIDV CAMCORDERS COMPARED									
COMPANY	PRODUCT	RATING	PRICE	CONTACT	STILL-IMAGE RESOLUTION ^a	DIMENSIONS ^b ; WEIGHT ^c	PROS	CONS	
Canon	Elura 100	★★★	\$400	www.canondv.com	1,152 × 864	2.2 × 3.0 × 4.3; 13.1	Low cost; compact; wide-screen shooting mode and screen; clear, bright LCD; excellent battery life.	Comparatively mediocre video and still-image quality; background motor noise.	
JVC	GR-D396US	★★★½	\$380	www.jvc.com	640 × 480	3.8 × 2.4 × 4.5; 14.1	Low cost; comes with two batteries; good battery life; long optical zoom.	Low-quality video; low-quality still images; tape must be loaded from the bottom; no optical image stabilization.	
JVC	GR-X5US	★★★★½	\$1,300	www.jvc.com	2,560 × 1,920	3.6 × 3.5 × 3.7; 17.9	Good image quality for both video and still images.	Boxy camcorder design can be problematic; lacks a viewfinder; short battery life; expensive.	
Panasonic	PV-GS300	★★★★	\$700	www.panasonic.com	640 × 480	2.9 × 3.0 × 5.3; 18.0	Shoots high-quality video; good selection of controls for both automatic and manual shooting; superior optical image stabilization.	Some manual controls are a little awkward to access; low-light video appears pale.	
Panasonic	PV-GS500 TOP Product	★★★★	\$1,000	www.panasonic.com	2,288 × 1,728	2.9 × 3.6 × 6.0; 22.0	Outstanding video and still-image quality; good selection of controls for both automatic and manual shooting; superior optical image stabilization.	Heavier and bulkier than other camcorders; some manual controls are a little awkward to access.	
Sony	DCR-HC36 MiniDV Handycam	★★★	\$400	www.sony.com	640 × 480	2.6 × 3.1 × 4.5; 15.0	Low cost; small size; light and easy to carry; easy to use.	Comparatively mediocre video quality; awful still-image quality.	

^a In pixels. ^b In inches (width × height × depth). ^c In ounces.

and access to manual focus. There's no shutter- or aperture-priority mode (not surprising, as the lens has a fixed aperture), and there's only limited control over shutter speed. The MiniDV tape is loaded from the bottom of the camcorder, and this is a real pain if you're using a tripod: you have to remove the camcorder from the tripod before changing tapes.

The JVC GR-D396US is one of the least-expensive camcorders available. However, many users will find that its lack of advanced control is limiting, and its poor video quality will put off all but the most budget-minded shooters.

JVC GR-X5US

If Picasso had designed a camcorder during his cubist period, the JVC GR-X5US might have been the result. While most camcorders go for an organic, curved look, the GR-X5US has a boxy look that breaks the rules of camcorder design. And the experiment is not completely successful: some aspects of the design don't work that well, and there are missing features. Indeed, the alternative design of the GR-X5US is a double-edged sword. While putting the LCD screen on the back of the camcorder gives it a wider viewing angle than most camcorders (and also makes waist-level and over-the-head shooting easier), this positioning leaves no room for a viewfinder. And while the LCD screen is adequate for most uses, it gets a little hard to see in direct sunlight.

Having no viewfinder means that you can't use one when you want to conserve the battery, which is a big problem. In our tests, the battery ran out after a paltry 49 minutes—not even enough to fill a MiniDV tape. While that might be adequate for a day's shooting, you'll need either a spare bat-

Macworld TESTING	STILL-IMAGE QUALITY	VIDEO QUALITY	BATTERY LIFE
Canon Elura 100	Fair	Good	Superior
JVC GR-D396US	Poor	Fair	Good
JVC GR-X5US	Superior	Very Good	Poor
Panasonic PV-GS300	Good	Superior	Good
Panasonic PV-GS500	Superior	Superior	Very Good
Sony DCR-HC36 MiniDV Handycam	Poor	Good	Fair
BEST RESULTS IN BOLD.			
Camcorders were tested in conjunction with the PC World Test Center. Each camcorder was tested at its highest-quality audio, video, and still-image settings in daylight and low-light conditions, with digital zoom disabled. A panel of experts evaluated the recorded scenes side-by-side on four identical TV sets to assign video and audio scores. The panel evaluated printed photos to assign still-image scores. Each camera was given a rating of Superior, Very Good, Good, Fair, or Poor. The scores for both video and stills are an average of all scores given; video and still scores were averaged separately.			

The JVC GR-396US's 32× optical zoom brings distant objects very close.

tery or an extended battery for anything more. JVC does offer high-capacity batteries (one with twice the capacity costs \$90), but these add significantly to the camcorder's weight.

The cubist design also means that you'll need two hands for anything more than basic operation. While the Zoom, Still Photo, and Record buttons fall under the fingers of the right hand, most of the other controls require the left hand, as they're located on

the left side of the camcorder body. These include buttons for setting the exposure mode, controlling manual focus, and accessing the on-screen menu. You alter the settings and move through the menu via a control dial on the front left side of the camcorder—another interesting idea that doesn't work that well: twisting the dial involves awkwardly reaching around the camcorder.

However, the camcorder is comfortable to hold, and the main control buttons are easy to reach without moving your hand, which is good for steady video capture. At a little over one pound, this camcorder is also pretty light.

The GR-X5US takes attractive video—the video we captured in our tests looked great, with strong, bright colors and plenty of detail. Although we didn't rate it as highly as the video that Panasonic's PV-GS500 and PV-GS300 captured, it did very well in both our normal- and low-light tests, capturing attractive video in both situations. The 3-CCD design of the camcorder no doubt helped here; with one sensor each for red, blue, and green, the camcorder can capture more color and detail than single-sensor models.

It can also capture still images at a 5-megapixel resolution, and its still images looked very attractive. Again, a camcorder such as this isn't going to replace a dedicated still camera, but it's nice to have the option of shooting decent-quality still photos. You can't, however, capture both video and high-resolution stills at the same time.

The JVC GR-X5US has an interesting design, but its setup may not be to everyone's taste, and its poor battery life and the omission of a viewfinder are serious problems. At \$1,300, it's also the most expensive camcorder we looked at. While it's undeniably a better camcorder than some of the other models, in both video- and still-image quality, it really isn't worth the extra cash: most people would be equally well



JVC GR-X5US

served by buying a less-expensive camcorder and spending the money they save on a decent point-and-shoot still camera.

Panasonic PV-GS300

The Panasonic PV-GS300 is the least-expensive 3-CCD camcorder that we've seen, and its image quality is impressive. It's a little bulkier than some; at 5.3 inches long and 1 pound and 2 ounces, it won't fit into a pocket. It does fit comfortably in the hand, but the heavier components on the left side of its body mean that it will sometimes tilt to the left while you're filming. Although the Record and Zoom buttons are comfortable, the mode dial and joystick are a little awkward; you have to use your other hand to brace the camcorder before you can comfortably reach them.

electronic image stabilization that camcorders such as the Sony DCR-HC36 offer. The battery life of the PV-GS300 is also above average: at a few minutes under two hours, it's long enough to last a weekend trip.

The Panasonic PV-GS300 is a great choice for shooters who don't mind spending a little extra for quality, but who don't want to lay out a lot of cash for a high-end camera such as the PV-GS500. It has most of the features that most users need.

Panasonic PV-GS500

The Panasonic PV-GS500 is the best camcorder we looked at: it offers more control, takes the best-looking video, and is the most flexible. And although it's at the high end of the feature scale, it's moderately priced for what it offers.



Panasonic PV-GS300

The Panasonic PV-GS300 captures video with bright, accurate colors.

The PV-GS300 lacks a couple of features that its more expensive cousin (the PV-GS500) has: absent are that model's focus ring and some of its manual controls. The PV-GS300 can take still images at 3.1 megapixels, and these still images looked good, showing strong color and fine detail.

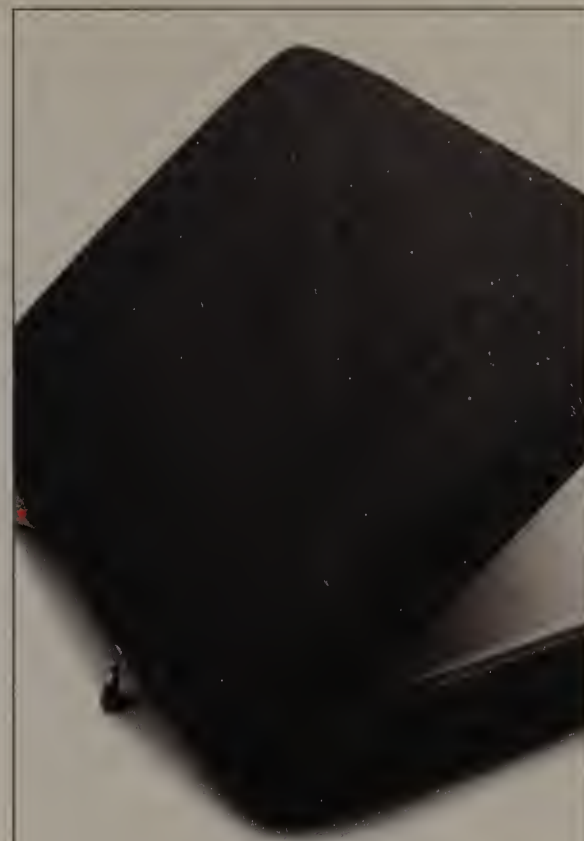
Three CCD image sensors (for red, green, and blue) inside the camcorder make the GS300 a strong performer; it captures video with bright, accurate colors and good detail, and it outperforms all the other camcorders except the PV-GS500. But its low-light video was a little pale; some objects in our test video lacked the vivid color that they showed under normal light.

This camcorder's optical image stabilization is also a big plus: an element in the lens moves to compensate for small camera movements—this is more effective than the

The highlight of this camcorder is its video quality: it got top marks in our tests, in both normal and low-light conditions. The video had bright, accurate color and plenty of fine detail. The 16:9 wide-screen video looks equally impressive, and the excellent 2.7-inch wide-aspect LCD screen makes it easy to see what you're shooting, even outdoors.

It is on the large side, though; at 1 pound and 6 ounces, it's the heaviest camcorder we tested. The upside is that it feels very solidly constructed, with a tough metal frame that should protect it better than the lightweight plastic body that many camcorders have. As with the PV-GS300, a lot of the weight (such as the lens and the battery) is on the left side of the camcorder, which means that it can tilt to the left unless you keep a tight grip. However, it fits

continues



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Panasonic PV-GS500

well in the hand and puts commonly used controls (such as the Zoom and Record buttons) at the fingertips. You control the on-screen menu with the joystick located next to the mode dial. This is awkward—you'll probably be able to reach the joystick with your thumb, but it'll be a stretch—you really need two hands (one to brace the camera while you loosen your grip to reach the joystick and mode dial). This can also be a pain when you're using the manual controls, as most of them are set with the joystick.

You do get a good selection of manual controls with the PV-GS500: you can put the camera into a fully manual mode, or use shutter and aperture priority (as well as a selection of scene modes for automatic use). This camcorder is also unusual in that its manual focus is actually usable: instead of having to fiddle with an on-screen control to focus, you can use the focus ring on the front of the camcorder.

There's no built-in light, but there is a way to illuminate a subject: when the LCD screen is in MagicPix mode and you turn it to face the subject, it acts as a light source. It's not especially bright, but it is fairly effective. The flash on the front of the camera is for still images only.

The battery life of the PV-GS500 was also impressive: at 132 minutes, it's long enough for a couple of days away from a power source.

There are a couple of omissions, though: there is no headphone socket, and the manual controls are not as easy to use as they were on previous models in this Panasonic line (the PV-GS400 was a particular favorite of serious videographers, as it had a headphone socket, a bigger screen, and more-easily accessible manual controls). These do

limit the appeal for serious shooters, but they won't be a problem for most people.

The Panasonic PV-GS500 is a great pick for shooters who want the benefit of automatic control and the flexibility of manual control. And it takes great-looking video and stills.

Sony DCR-HC36 MiniDV Handycam

At \$400, the Sony DCR-HC36 MiniDV Handycam is one of the most affordable camcorders we looked at. But unfortunately, it produced some of the lowest-quality video as well. Although our test video looked acceptable when viewed by itself, it looked inferior when compared with the video produced by the costlier camcorders, with pale colors and a distinctly fuzzy, grainy look. These problems show up even in good lighting conditions, and are much more exaggerated in low light. In our low-light tests, the grain in the images was extremely distracting and much more obvious than the grain in the video produced by the other camcorders.

The DCR-HC36 handles well and is easy to use. It fits comfortably in the palm of the hand, with the zoom control falling under the index finger when the hand strap is properly adjusted. The Record button is a little high, though; you may have to brace the camcorder with your left hand to reach up and press it. This camcorder is a bit bulkier than the Canon Elura 100, but it's pretty light, at 15 ounces.

Most of the DCR-HC36's controls are located in an on-screen menu, which you can access through the touch screen. Although this does keep camcorder operation as simple as possible, you end up with fingerprints on the screen, and many options

continues



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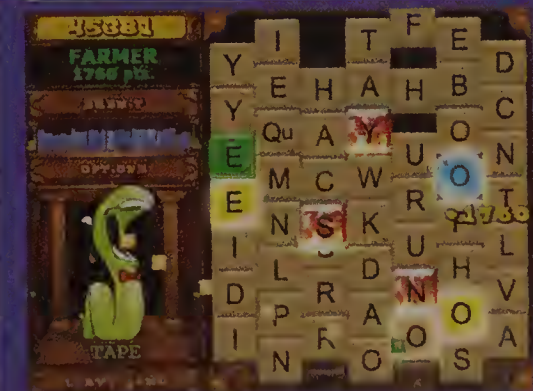
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The Panasonic PV-GS500's video had bright colors and plenty of fine detail.



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Sony DCR-HC36
MiniDV Handycam

are buried deep within menus, requiring a number of screen presses to access. But to be fair, this is a camcorder that's designed for point-and-shoot users, many of whom will never want to go anywhere near options such as the white-balance setting. And Sony offers another option that these users will find attractive: the Easy mode (accessed through a button on the camcorder body) puts most settings at Automatic, which is great for inexperienced or nervous shooters.

The 2.5-inch LCD screen is clear and bright, but it doesn't accommodate wide-screen viewing: if you shoot with the camcorder in 16:9 mode, it adds two black bars at the top and bottom; this makes the video more difficult to see. The DCR-HC36's 20× zoom lens also includes electronic image stabilization, which does a reasonable job of controlling the effects of camera shake. It's not as effective as the optical image stabilization of Panasonic's PV-GS300 and PV-GS500, though. The battery life of about 100 minutes was acceptable but not outstanding.

The DCR-HC36 can capture still images to a Memory Stick Duo card, but only at a resolution of 640 by 480. And the results are, as you might expect, less than appealing: we saw grainy images and pale, washed-out color. Frankly, the image quality is so poor that it's not worth bothering with: unless you have a burning need to record low-resolution images to Memory Stick, go with the DCR-HC26 (the next model down in the Sony line, it skips the Memory Stick slot completely) and put the \$50 you'll save toward buying a decent point-and-shoot still camera. Even a low-end digital camera will take better still images than this camcorder.

The Sony DCR-HC36 MiniDV Handycam is a budget camcorder that takes adequate video in daylight, but its poor performance in

low light will be a problem if you want to shoot videos indoors—at a party, for instance.

Macworld's Buying Advice

In terms of video quality, the Panasonic PV-GS500 is the clear winner—it scored highest in our tests in all lighting situations, taking great-quality video. It also has a good selection of features that serious camcorder users will like (such as extensive manual controls), though it may be a bit much for some users, not only in terms of features but also in terms of cost and heft. Panasonic's PV-GS300 has many of the advantages of the PV-GS500, but it's smaller and less costly, so it's a good pick for people who want good video quality in a more convenient package.

For budget filmmakers, the Canon Elura 100 is a great choice: it's reasonably priced and has all the features that most users need. Its image quality is not as good as that of the more expensive models, but it's more than acceptable for making home movies of the kids so you can embarrass them in the future.

Although all of these camcorders can double as digital still cameras, don't throw out your still camera quite yet. Only the more expensive models take still images at a resolution and quality anywhere near what even a cheap still camera can achieve. The Panasonic PV-GS500 and the JVC GR-X5US take still images at a resolution equivalent to that of a 4- and 5-megapixel camera, respectively; however, these days you can pick up a dedicated still camera that takes higher-resolution pictures for an affordable price. And the low-resolution still images some less-expensive camcorders capture aren't worth the bother. If you want decent still images and video, consider a slightly less-expensive camcorder and then buy a dedicated still camera. □

RICHARD BAGULEY is a freelance writer whose work has appeared in *PC World*, *Wired*, and other publications.

Photoshop Plug-ins

Making Adobe's Image-Editing Program Even Better

It may seem that Adobe Photoshop CS2 allows you to edit a digital image in any way you can imagine; however, Photoshop has spawned a bustling industry based on plug-ins that enhance its abilities. We took a look at five recently released Photoshop plug-ins and upgrades: Alien Skin Software's Exposure, The Plugin Site's FocalBlade 1.0, PictoColor's iCorrect EditLab Pro 5.0, Imagenomic's Noiseware Professional 4.0.1, and Pixel-Genius's PhotoKit Color 2.0.2.

The reviews on this page are shorter versions of full-length reviews that appear on our Web site. Please go to macworld.com/1525 for links to the complete reviews of these plug-ins.

Exposure

Some professional photographers jumped readily across the digital divide from film to digital photography. Others are crossing over more reluctantly. One thing they all have in common is nostalgia for their favorite film stocks. Alien Skin Software is making them feel more at home with Exposure (ⓂⓂⓂⓂ; macworld.com/1514), a Photoshop CS and CS2 plug-in that simulates the look of photos shot with a variety of color and black-and-white films. With one click, your digital photos can take on the saturated colors of Fuji Velvia or the unique grain of Ilford Delta 3200. Exposure is a good choice for professional photographers who want a quick way to simulate a favorite film stock. The plug-in's film emulations look quite authentic and are easy to preview and apply.—JAN KABILI

FocalBlade 1.0

Designed for both amateur and professional photographers, the Plugin Site's FocalBlade 1.0 (ⓂⓂⓂⓂ; macworld.com/1515) offers a host of sharpening methods for images of differing content and quality, as well as a slew of blurring techniques perfect for special

Are Plug-ins Universal?

How do Photoshop plug-ins fit into the Intel transition? Makers of Photoshop plug-ins are following Adobe's lead, and will release Universal versions of their products when Adobe does (Adobe CS3 is scheduled for a spring 2007 release).

Alien Skin senior developer Finley Lee explains that a plug-in's processor architecture must match the host program's, so running the PowerPC version of Photoshop on Rosetta requires that all plug-ins

be PowerPC-compatible as well. Universal apps contain code that supports both architectures, so Photoshop running on Rosetta would load the PowerPC code of any Universal plug-ins.

In the meantime, people who work with PowerPC-based plug-ins on Intel Macs will not experience performance penalties beyond the known slowdowns associated with running Photoshop under Rosetta.—JIM DALRYMPLE

effects such as glow or soft focus. It gives you more precise control than Photoshop—such as the ability to sharpen edges and surfaces separately—and it can apply sharpening automatically. Also, it allows you to view the sharpening mask as a negative. Photographers who need a simple sharpening solution and those who need precise control should give FocalBlade a spin. The Mask Display feature alone is worth the purchase price.—LESA SNIDER KING

iCorrect EditLab Pro 5.0

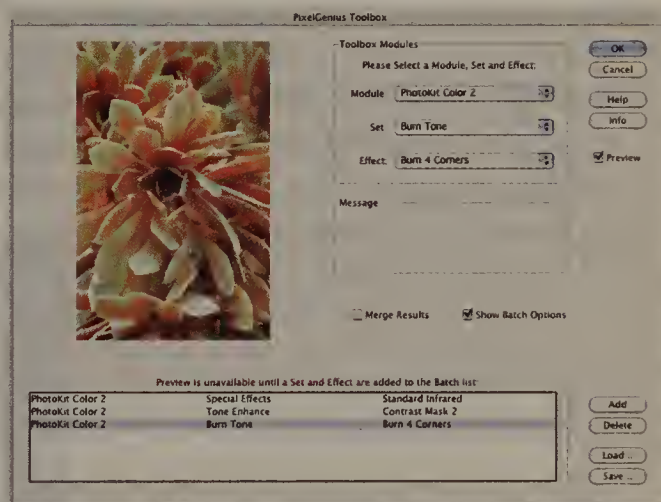
Even for color experts, correcting color can be time-consuming and frustrating, because of the many problems with and methods of correction. PictoColor's iCorrect EditLab Pro 5.0 (ⓂⓂⓂⓂ; macworld.com/1516) plug-in (also available as a stand-alone application) is geared toward digital photographers and anyone else who appreciates optimal color. It makes correcting RGB images a breeze, and its interface offers as much or as little assistance as you need. If you want to save time or achieve frustration-free color correction, iCorrect EditLab Pro is a worthy addition to your Photoshop bag of tricks.—LSK

Noiseware Professional 4.0

Imagenomic's Noiseware Professional 4.0.1 (ⓂⓂⓂⓂ; macworld.com/1518) gives you many flexible options for controlling photo noise. You can use its presets or its Detail, Frequency, Tonal Range, or Color Range sliders to boost image quality significantly.

Noiseware is a must-have plug-in that provides better

detail and noise control than Photoshop's pixel sharpening or blurring filters. The especially helpful detail-enhancement controls let you maintain sharpness without cumbersome, time-consuming selections.—ABIGAIL RUDNER

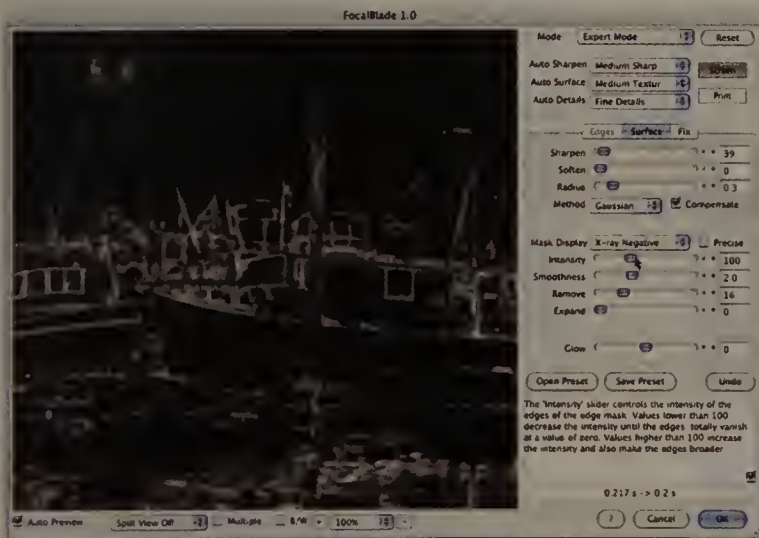


Easy Tools PhotoKit Color's PixelGenius Toolbox displays a preview of multiple combined effects before you apply them to a photo.

PhotoKit Color 2.0

Do you wish you could enhance and correct your color photographs in Photoshop, but lack the time or skill to get the results you want? Look no further. PhotoKit Color 2.0.2 (ⓂⓂⓂⓂ; macworld.com/1517), from PixelGenius, makes it easy for photographers to apply a wealth of creative effects and color corrections with a minimum of effort. Accessible from Photoshop's Automate subinenu, this plug-in is compatible with 8- and 16-bit RGB images. PhotoKit Color 2.0.2 is a top-notch plug-in that offers excellent color effects and color-correction tools via a straightforward interface.—JK

JAN KABILI is a Photoshop author and trainer. LESA SNIDER KING is the founder of the Graphic Reporter (www.graphicreporter.com) and the chief evangelist for iStockphoto.com. ABIGAIL RUDNER produces training titles for Lynda.com. She teaches Adobe Photoshop and other creative software packages.



Edge Mask FocalBlade's Mask Display lets you see and tweak the edge mask used in sharpening and blurring photos.



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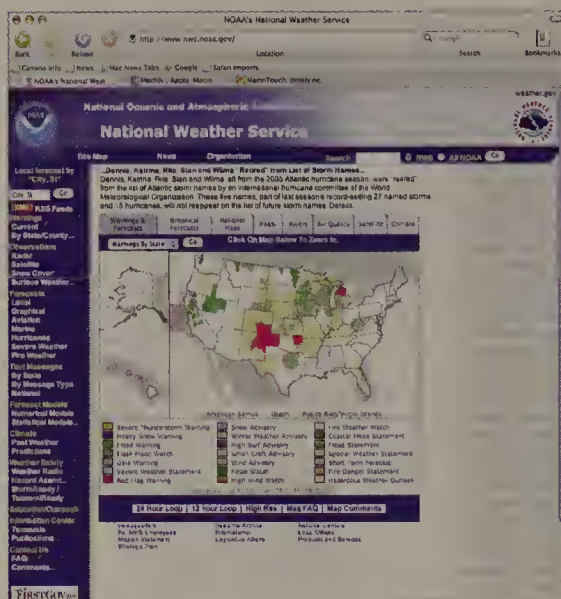
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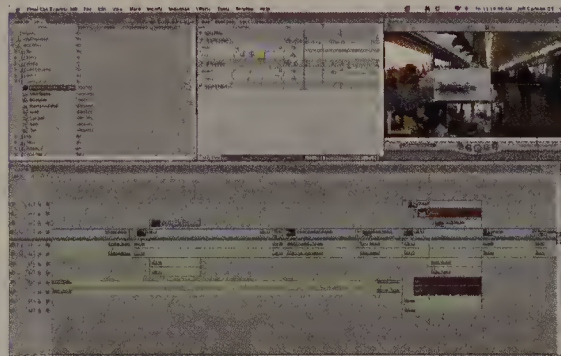
REVIEWS

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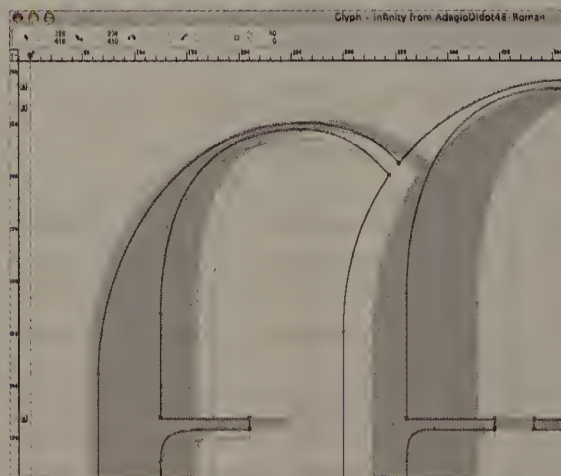
For complete reviews of the products listed here, visit www.macworld.com/reviews.



★★★★ Camino 1.0 ▲ (free), from Mozilla Corporation (www.caminobrowser.org): Camino 1.0.1, a fleet-footed, lightweight, open source Web browser, is loaded with useful features such as built-in ad and pop-up blocking, tabs, Spotlight-searchable bookmarks, and pause and resume downloading capabilities. You'll never waste time trying out a new browser, and Camino's interface, functionality, and performance are all reasons why you should definitely give it a try (macworld.com/1506).



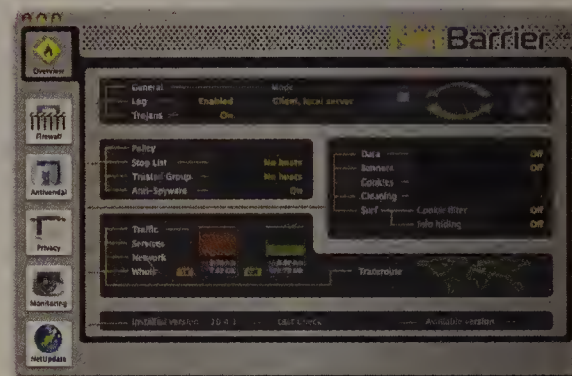
★★★★ Final Cut Express HD 3.5 ▲ (\$299; upgrade, \$99), from Apple Computer (www.apple.com): Final Cut Express HD 3.5, the new version of Apple's intermediate digital-video-editing software, has only three new features. But they are significant and make this latest version a compelling upgrade (macworld.com/1513).



★★★★ FontLab Studio 5.0 ▲ (\$649; upgrade from version 4.5 and 4.6, \$99), from FontLab (www.fontlab.com): With unique killer features like native TrueType sup-

port and single-window Multiple Master editing, FontLab's Studio 5.0.2 is the most capable font-editing tool available today (macworld.com/1512).

★★★★ NetBarrier X4 10.4 ▼ (\$70), from Intego (www.intego.com): NetBarrier X 10.4.1 is a versatile, highly configurable firewall application that facilitates superior protection for your Mac. The program's default configurations are probably either too permissive or too secure for most users, but customization allows for all the Internet and network access you need, while protecting your Mac from miscreants (macworld.com/1313).



★★★★ Treo 700p ► (with your existing plan, \$619 to \$649; with a new cellular plan, \$400), from Palm (www.palm.com): The Treo 700p—a combination PDA and cell phone—is designed to appeal to both consumers and business users: it has e-mail and Microsoft Office functionality, a 1.3-megapixel digital camera that shoots better-than-average pictures for a cell phone, and MP3 music-playing software. The 700p is one of the best smart phones on the market, despite its relative expense. What makes it even better is its speedy Internet access (macworld.com/1510).



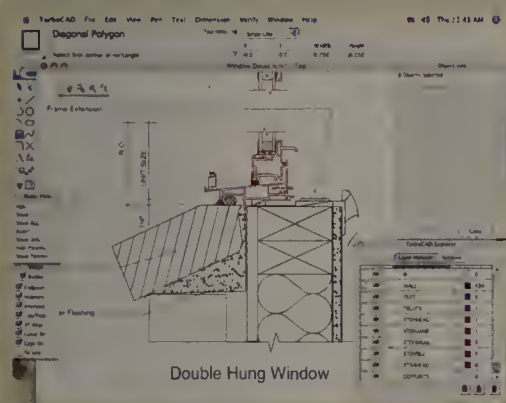
★★★★ TVMini HD ▼ (\$250), from Miglia (www.miglia.com): Miglia's TVMini HD is a stylish and compact device that enables Mac users to watch, record,



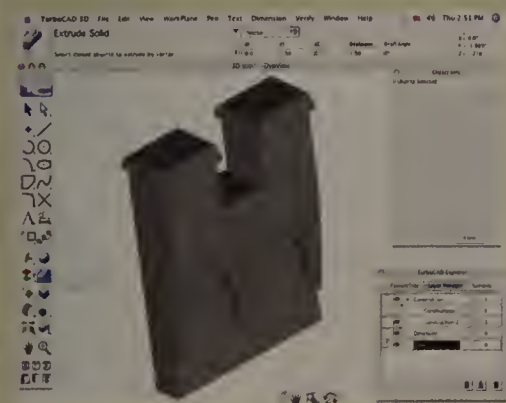
and edit over-the-air digital HDTV ATSC (Advanced Television Systems Committee) content and unencrypted digital cable TV programs. It's a great way to get HDTV content onto your Mac. Because the TVMini HD is a bus-powered device, you can take it anywhere you go. So you can watch *Lost* or *Desperate Housewives* while camping, if you want—as long as you're within range of an ATSC broadcast tower (macworld.com/1507).

CAD PROGRAMS

Drafting in 2-D and 3-D



★★★★ TurboCAD 2D Macintosh (\$100), from IMSI (www.turbocad.com): TurboCAD 2D Macintosh, an easy-to-use 2-D CAD (computer-aided design) application, is a terrific value for professionals looking for a full-featured drafting application or for homeowners or students looking to create CAD drawings. Its straightforward interface will be familiar to anyone with experience using CAD or drawing programs (macworld.com/1508).



★★★★½ TurboCAD 3D Macintosh (\$495), from IMSI (www.turbocad.com): TurboCAD 3D Macintosh has all the features and tools that its TurboCAD 2D cousin has, including the same simple interface. If you want an easy-to-use, basic 3-D CAD program for a relatively reasonable price, TurboCAD 3D is a good choice. However, if your projects are architectural in nature, you should consider other CAD programs aimed directly at architects (macworld.com/1509).

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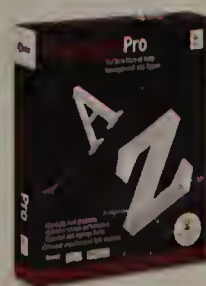
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FontAgent Pro	5.0 out of 5.0
Suitcase Fusion	1.7 out of 5.0



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COLOR LASER PRINTER

★★★★ Magicolor
2430 DL (\$499), from
Konica Minolta (www.konicaminolta.com):

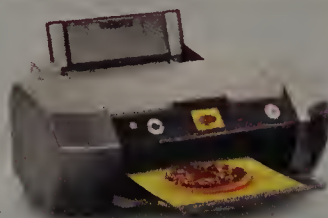
The Magicolor 2430 DL is a capable networked color laser printer whose setup needs a bit of finessing. (The toner cartridges are preinstalled, but you need to remove some tape and clips.) However, the printer has a low price, accurate and saturated color prints, and unique features such as PictBridge camera printing. The 2430 DL is a great buy for a home office, a small work group, or anyone who doesn't need PostScript support. Beware: this printer is noisy—you'll definitely notice it in a small home office (macworld.com/0635).



INK-JET PHOTO PRINTER

★★★★ Stylus
Photo R340
(\$200), from
Epson (www.epson.com):

The Epson Stylus Photo R340 prints the best color photos in its class, and it reproduces shadow detail extremely well. It's a great choice for printing brilliant color photos, with or without the help of your computer. Also, this printer's ability to print to CDs and DVDs extends its usefulness—and its nice big LCD sweetens the deal. There is a downside, though: its black-and-white prints are subpar and can show slight color casts (macworld.com/0948).



FIREWIRE DRIVES

★★★★ Black Series Triple
Interface, 250GB (\$240),
from Iomega (www.iomega.com):

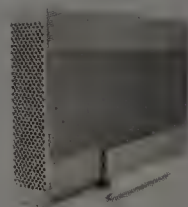
You can't go wrong with its speed, connection options, and low price per gigabyte. This drive can boot OS X via FireWire and includes Retrospect Express (macworld.com/0580).



ALSO RECOMMENDED:

★★★★ Mercury Elite-AL
Pro 7,200 rpm FireWire
800/400 + USB2, 250GB
(\$230), from OWC (www.macsales.com):

This speedy drive can boot OS X via FireWire and includes Retrospect Express. It also has multiple connection options (macworld.com/0580).



MACS

DESKTOP

Product	Processor	Display	Rating	More Information	Best Price	Speedmark 4.5 Score
	Intel Core Duo/1.83GHz	17 inches	★★★★	macworld.com/1153	\$1,099	202
	Intel Core Duo/2GHz	20 inches	★★★★	macworld.com/1154	\$1,449	214
	Intel Core Duo/1.5GHz	not included	★★★★	macworld.com/0909	\$569	123
	Intel Core Duo/1.66GHz	not included	★★★★	macworld.com/0911	\$761	144
	G5/dual-core 2GHz	not included	★★★★	macworld.com/0942	\$1,699	227
	G5/dual-core 2.3GHz	not included	★★★★	macworld.com/0945	\$2,149	254
	G5/two dual-core 2.5GHz (Quad)	not included	★★★★	macworld.com/1089	\$2,799	272

PORTABLE

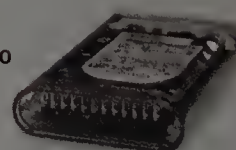
	Intel Core Duo/1.83GHz	13 inches	★★★★½	macworld.com/1449	\$1,085	154
	Intel Core Duo/2GHz	13 inches	★★★★½	macworld.com/1450	\$1,287	161
	Intel Core Duo/2GHz (black)	13 inches	★★★★½	macworld.com/1451	\$1,439	161
	Intel Core Duo/2GHz	15 inches	★★★★	macworld.com/1475	\$1,733	167
	Intel Core Duo/2.16GHz	15 inches	★★★★	macworld.com/1476	\$2,075	167
	Intel Core Duo/2.16GHz	17 inches	★★★★	macworld.com/1383	\$2,394	193

^aFrom a PriceGrabber survey of retailers as of July 10, 2006. ^bSpeedmark 4.5 is Macworld Lab's standard test tool for benchmarking systems running Mac OS X 10.4 (Tiger). For information on Speedmark testing, go to www.macworld.com/speedmark.

PORTABLE DRIVE

★★★★ Mercury On-the-Go
7,200 rpm 8MB, 60GB
(\$250), from OWC
(www.macsales.com):

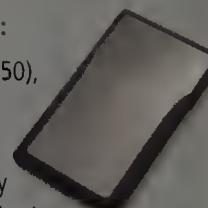
Loaded with useful utilities, this little drive has good connection options and an eye-catching design. It's also fast; it can boot OS X via FireWire and is powered by the FireWire bus. It includes Retrospect Express, other utilities, and a carrying case (macworld.com/0580).



ALSO RECOMMENDED:

★★★★ ComboGB, 60GB (\$250),
from WiebeTech (www.wiebetech.com):

Though it comes at a relatively high cost per gigabyte, this drive is fast and has many connection options. It can boot OS X via FireWire and is powered by the FireWire bus (macworld.com/0580).



★★★★ MiniMax 250GB
(\$250), from Iomega
(www.iomega.com):

If you own a Mac mini, you should check out the MiniMax. It fits neatly under the mini, and its integrated USB and FireWire hub makes it a great companion to the littlest Mac (macworld.com/1159).



FLATBED SCANNER

★★★★½ **CanoScan 9950F**
(\$400), from Canon
(www.canon.com):

The CanoScan 9950F offers improved scan quality and more-intuitive software controls. This model tops its predecessor, the 9900F, in almost every way—resolution, color accuracy, transparency, scan quality, and software interface (macworld.com/0188).

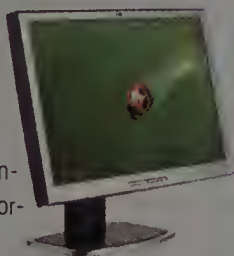


LCD MONITORS

23-INCH DISPLAY

★★★★½ **L2335** (\$1,599),
from Hewlett-Packard
(www.hp.com):

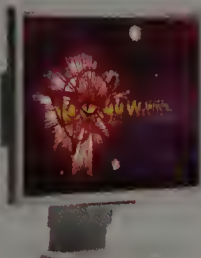
Along with its outstanding value, analog and digital connectors, ability to pivot to portrait mode, and adjustable height, the L2335 provides excellent video-in options and very good color fidelity and viewing angle (macworld.com/0278).



20-INCH DISPLAY

★★★★½ **MultiSync LCD2070NX** (\$799),
from NEC (www.necdisplay.com):

The MultiSync LCD2070NX is great for people who want a moderately priced 20-inch monitor that can display bright, accurate colors. It sports digital and analog inputs, an integrated USB 2.0 hub, and a thin bezel (macworld.com/0636).



17-INCH DISPLAY

★★★★ **SDM-HS75P**
(\$450), from Sony (www.sony.com):

Although it's short on bells and whistles—this display doesn't have built-in USB, speakers, or the ability to pivot—the HS75P is a good choice for people with limited desk space who are looking for a bright and shiny, well-designed display. It has very good color fidelity and text quality (macworld.com/0637).



DIGITAL CAMERAS

8-MEGAPIXEL DIGITAL SLR

★★★★½ **EOS Digital Rebel XT** (\$899;
with lens, \$999),
from Canon
(www.canon.com):

Canon defined this market with the original Digital Rebel, and the company keeps its lead with the EOS Digital Rebel XT. The Rebel XT is a very small camera—much smaller than the original Rebel. This feature set, image quality, and price, combined with the vast assortment of available Canon mount lenses, make it the best choice in the sub-\$1,000 digital-SLR market (macworld.com/0535).



ADVANCED DIGITAL CAMERA

★★★★ **Panasonic Lumix DMC-FZ30K**
(\$700), from Panasonic
(www.panasonic.com):

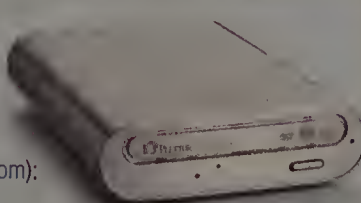
The Panasonic Lumix DMC-FZ30K is a sizable beast: at 1.5 pounds and just over five inches long, it feels more like an SLR than an all-in-one camera. The chunky body may be a blessing for people with large hands, who often find smaller cameras uncomfortable. The DMC-FZ30K's SLR styling is well suited to photographers eager for manual controls. The camera's images look great when taken in good light, but noise can quickly become a problem at higher ISOs (macworld.com/1157).



DUAL-LAYER DVD BURNER

★★★★ **PX-716UF DVD±R/RW** (\$239),
from Plextor
(www.plextor.com):

The PX-716UF DVD±R/RW drive features flexible connectivity options; it burns 2.4x-rated dual-layer media at 4x; it has fast 16x burn speeds; and it has the fastest read speeds of the drives we've tested (macworld.com/0313).



IN THE LAB

Hardware Products We Tested This Month

5.1-MEGAPIXEL DIGITAL CAMERA

★★★★½ **Fujifilm FinePix V10** (\$349), from Fuji
(www.fujifilmusa.com):

The most striking feature of the compact FinePix V10 is its three-inch LCD, which almost fills the back of the camera. It's handy for framing shots and makes viewing images a pleasure. The camera's top ISO setting of 1,600 lets you take photos of dimly lit subjects without using the flash, but its battery life is limited and its image quality is average (macworld.com/1521).



6.1-MEGAPIXEL DIGITAL CAMERA

★★★★½ **Kodak EasyShare V610**
(\$450), from
Kodak
(www.kodak.com):

With a long-range 10x optical zoom, the EasyShare V610 can bring the farthest subjects into full, detailed view. Although packed with features, this dual-lens camera also has a propensity for blurred photos at its highest zoom levels. It also has a disappointingly short battery life (macworld.com/1522).



MIDRANGE FLATBED SCANNER

★★★★ **Epson Perfection V700 Photo**
(\$550), from Epson
(www.epson.com):

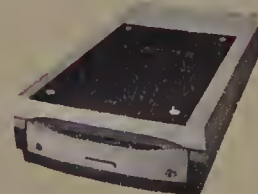
The V700 is a fine choice for people looking for a midrange scanner for both photos and high-resolution transparencies. It has two lenses that allow you to scan slides and film at 6,400 dpi, but unless you're planning on making very large prints, a 4,800-dpi scanner can be much cheaper (macworld.com/1519).



MIDRANGE FLATBED SCANNER

★★★★ **Microtek ScanMaker i800** (\$450),
from Microtek (www.microtekusa.com):

The ScanMaker i800 is a midrange flatbed scanner with a longer-than-average scanning bed capable of digitizing legal-size documents. It has a built-in transparency unit for scanning slides and photos, but we had some issues with the software that comes with the scanner (macworld.com/1520).



Cameras were tested in conjunction with the PC World Test Center.

Top Products are those we've recently reviewed in a comparison of like products. As new products become available, we will update the list. For longer reviews of these products and for other product recommendations, go to macworld.com/reviews. All prices are as rated. For the best current prices, go to macworld.pricegrabber.com. All products were available as of June 26, 2006.

FILE-TRANSFER APP

FileChute 2.0.5

The ubiquity of e-mail makes it easy to send small files to anyone as attachments. But what if you need to send large files? Many Internet service providers have limits on attachment sizes, and even when they don't, trying to send (or receive) a 20MB file can be a hassle.

For people who frequently send large files across the Internet, Yellow Mug Software's FileChute 2.0.5 (★★★★; \$15; www.yellowmug.com) is the easiest solution I've seen. It copies files to a server of your choosing and then provides a download URL for you to give to the recipient.

FileChute works best with a .Mac account (it picks up your account information from your .Mac preference pane), but it also works with Earthlink, WebDAV, and FTP servers after a setup procedure. You can then drop a file, folder, or group of files or folders onto the drop zone in the FileChute window. If you're uploading multiple files or folders (or one large file you'd like to compress), you choose the type of archive for FileChute to create (.dmg, .tar, or .zip)—you can even assign a password to .dmg archives. You can also choose the name of the uploaded file or archive. FileChute then uploads the file to your iDisk or another server (you see the progress of the upload in the FileChute window) and displays the download URL, which you can drag and drop or copy and paste into an e-mail message to send to the recipient. The recipient clicks on the link to download the file archive via a Web browser.

If you have multiple servers configured, you upload to a particular server by choosing it from a pop-up menu before dropping your file(s).

Since you probably don't want files taking up space on your iDisk or server long after they've been downloaded, FileChute offers two options for cleaning house. You can choose a default expiration date of 1 to 30 days after a file is uploaded; a quick click on the big red X deletes all expired files. Or you can view all the FileChute-uploaded files currently



Heavy Attachments FileChute makes it easy to send large files to other people.

on your server and delete individual files. (Another nice option when you view all your uploaded files is the ability to create a new e-mail message with a link to any file on the server.)

When used with a .Mac account, FileChute works seamlessly. However, using a WebDAV or an FTP server can be trickier because of the way some servers deal with file paths. In this case, you'll need to modify the URLs to match your server when you set up FileChute. Also, note that although OS X provides a built-in FTP server, using FileChute with that kind of server can be difficult, especially if your Mac is behind a firewall or router, or if your IP address changes frequently.

BATTERY-STATUS UTILITY

UnPlugged 1.7

Does this scenario sound familiar? You sit down, plug in your Mac laptop, and then get to work, figuring your laptop battery is charging all the while. Later, you unplug your laptop to go mobile—and its battery dies after a few minutes. Turns out that your laptop's power cable didn't have a good connection, or that at some point during charging, the cable got pulled out just enough to stop providing power.

This has happened to me many times—most frequently when someone accidentally pulls on (or trips on) the power cable, partially unplugging it.

Over the years, Apple has tried to address this very problem with AC adapters that have a built-in light—amber means

it's charging your battery, and green means your battery is charged but the adapter is still providing power. Similarly, if you have OS X's battery-status indicator in your menu bar, you can view your laptop's power and charging status. But I have so many electronic devices with little lights on them that I rarely even notice such indicators anymore. And when I'm using my laptop at my desk, it's connected to an external monitor, a keyboard, and a mouse, and it's placed mostly out of sight. So I don't always see the light on the cable, and I've grown largely oblivious to menu-bar indicators.

Michele Balistreri's UnPlugged 1.7 (★★★★; payment requested; www.briksoftware.com) solves this by displaying a notice whenever there's a change in your laptop's power source. If you plug in your laptop to charge it, you get confirmation that it's really plugged in. If you accidentally pull out the power cable, UnPlugged lets you know. If you're running the Growl notification application (growl.info), UnPlugged will even use Growl notification boxes. And the utility uses a minuscule amount of RAM and CPU resources. (As a bonus, Unplugged also notifies you of the remaining charge, at 10 percent intervals, when running off battery power.)

CONTEXTUAL-MENU HOT-KEY APP

Shortcuts 1.0

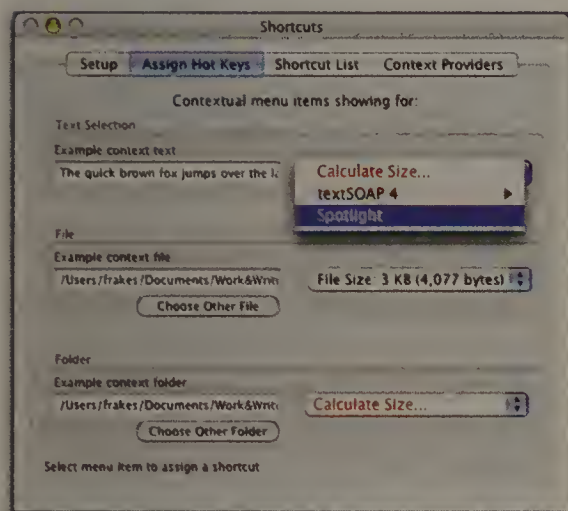
I love keyboard shortcuts. I'm also a big fan of contextual-menu plug-ins. But until now, I haven't been able to assign keyboard shortcuts to my contextual-menu items.

If you're like me, Abracode's Shortcuts 1.0 (★★★★; free; www.abracode.com) will be a



Stay In Charge UnPlugged informs you when you've accidentally unplugged your MacBook's AC power cable.

neat addition to your system-tweaking toolbox. Its Assign Hot Keys tab offers a list of current contextual-menu items, organized by the type of action each one performs: actions on text (Spotlight searches, for example) or actions on files and folders (such as Automator workflows or third-party file-manipulation tasks). To assign a keyboard shortcut to a contextual-menu action, you choose it from the pop-up menu and then enter your desired shortcut (an item displayed in red is an item you've already assigned a shortcut to).



Contextual Keystrokes Assign keyboard shortcuts to contextual-menu items with Shortcuts.

When you're done assigning shortcuts, clicking on the Start button under the Setup tab makes them available. (The Add button adds Shortcuts' background process to your Login Items so your shortcuts are available each time you log in.) A list of your assigned shortcuts is available under the Shortcut List tab.

The Setup window offers two other options. Clicking on the Install button adds an input manager to OS X that makes it possible for Shortcuts to work with text-related contextual-menu plug-ins that work in Cocoa applications. And if you enable one of the bezel-window notification options, Shortcuts will flash on your Mac's screen the name of any contextual-menu item you activate via a keyboard shortcut. I recommend using this option, as it can be useful in situations where you accidentally press a shortcut—instead of wondering what happened, you know exactly what command you just executed.

Shortcuts' major flaw—and the reason it doesn't receive a higher rating—is that it works only with contextual-menu *plug-ins*. That is, it doesn't work with contextual-menu items added by applications themselves. And even some contextual-menu

continues

IPOD VIDEO TAGGER

Parsley Is Atomically Delicious 1.3.6

Except for the movies I get in the mail from Netflix, I don't spend very much time watching DVDs on my TV at home—which is too bad, because I have a big collection. But I've recently discovered a new life for my DVDs—especially the TV shows—on my fifth-generation iPod.

I've taken to ripping my DVDs (yes, DVDs I own—and yes, I think this is fair use) to an iPod-compatible MPEG-4 format. I then transfer those files to my iPod to watch while exercising on a stationary bike at the gym, riding the streetcar to work, or sitting on an airplane.

One problem is that since iTunes doesn't let me enter tags for things such as a show's title, season number, and episode number, these files don't show up in the TV Shows section of the iPod's Video menu and don't get neatly filed in running order and by season (as TV shows purchased from the iTunes Music Store do).

I found a way to overcome iTunes' shortcomings: James Huston's Parsley is Atomically Delicious (PAD) 1.3.6 (♦♦♦♦; free; www.them.ws/pad). PAD provides a graphical user interface (GUI) for the AtomicParsley command-line metadata editor.

PAD's interface is one of its best attributes. For a TV show, you can enter the episode title, show title, season number, episode number, and year.

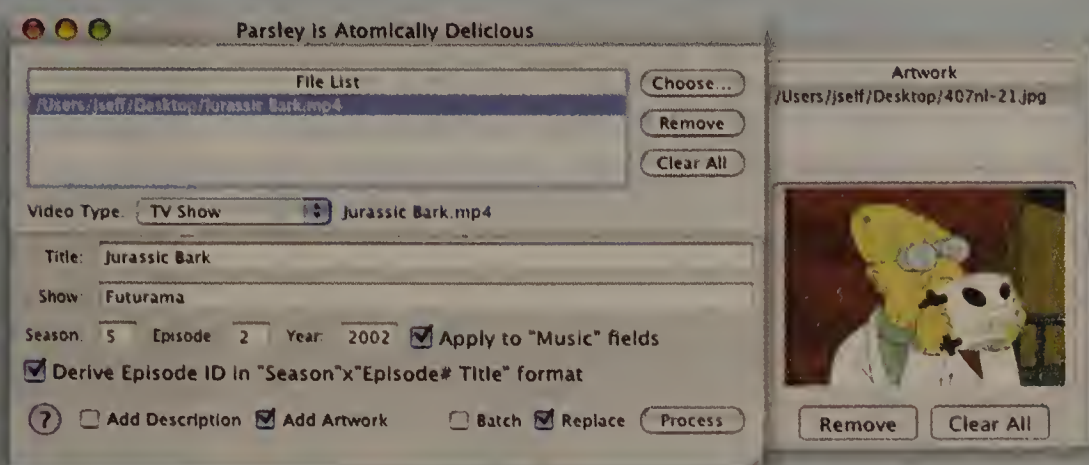
A few options require your attention. Apply To "Music" Fields adds the tags to the equivalent fields in iTunes—without these tags, iTunes won't be able to display all that information. You can choose to replace the file you're tagging instead of creating a duplicate (PAD actually creates a temp file and then removes it). You can even add a description or artwork (such as the DVD cover) to your files.

You can also use PAD to tag music videos or movies. The one area where PAD could use some work is in its batch-processing capabilities.

When you tag a whole season of TV episodes, for example, there's no reason to enter show, season, and year data manually for each track. PAD will let you adjust those tags for all the files at once, but there are two problems. Since you can't enter episode titles for items in a batch, those will be missing. You can remedy that by naming your files in the Finder before adding them to PAD, and then selecting the Rename Files Based On Your Title option in PAD's preferences—but this method works only in Batch mode. Although it's somewhat of a hassle, it solves the first problem.

But that leads to the bigger problem. If you turn on the batch processor and process a bunch of files, PAD automatically fills in the episode numbers. That's a good thing—or at least it would be if the files were in the correct order in the File List. But PAD arranges files alphabetically, and there's no way to organize them yourself, either by adding them in the proper sequence or by dragging them around in the File List. The solution I've found is to number the episode file names before adding them to PAD—but that brings us back to the naming problem. You can combine names and numbers—01 *First Episode Name*, 02 *Second Episode Name*, and so on—but then the episode names in iTunes and on the iPod will have numbers in front of them. If that doesn't bother you, it's a passable workaround (but it does bug me, so I go back and remove the numbers in a second pass, either in PAD or in iTunes).

Although PAD isn't the only GUI for working with AtomicParsley on the Mac, I prefer it to Lostify and vID Infiltr8. PAD has introduced order where once there was chaos—well, there was a smart playlist on my iPod with my videos in the order I added them to the iPod, but that was chaos to me. And if PAD provided a better way to process multiple files from one TV series, it would be nearly headache-free.—JONATHAN SEFF



Tasty Tagging Parsley is Atomically Delicious gives you control over tagging TV shows, movies, and music videos for the fifth-generation iPod.

Menu-Bar Utilities

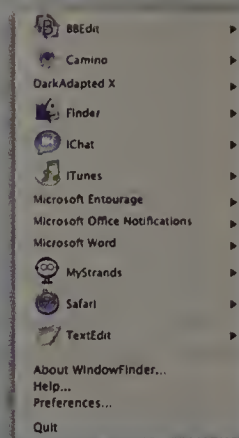
Many people forget about the right side of OS X's menu bar, a place for quick access to settings and application controls. That's a shame, because menu-bar utilities can be very useful. Here are a few of my recent favorites.

Looking for an open Wi-Fi network? Coconut Flavour's **coconutWiFi 1.2** (◆◆◆½; payment requested; www.coconut-flavour.com) puts a small item in your menu bar that displays both the number of wireless networks within range and the status of those networks. Clicking on the menu icon displays a listing of any networks found and the status—open or closed—of each. And coconutWiFi can alert you when you're within range of an open network. Sadly, you can't use coconutWiFi's menu to switch networks; you still need to use Apple's AirPort status menu for that.

If your keyboard has no light to indicate when caps lock is activated, John Woodward's **Caps Warn 2.1** (◆◆◆½; free; www.thewoodwards.us) will come in handy—it provides an indicator

in your menu bar that does just that (or flashes an alert on the screen and notifies you with an alert sound). Or, if you prefer, Caps Warn can use the left side of the menu bar to indicate the status of the caps lock, shift, control, option, and ⌘ keys, so you always know which is pressed.

Sanity Software's **WindowFinder 1.4** (◆◆◆◆; \$10; keakaj.com) sticks a new menu in the menu bar that lists all open windows in all applications, grouped by application. Choosing a window from the menu switches to its application and brings it to the front. You can customize the size of the menu's application icons—or omit them altogether—and you can exclude particular applications. And although certain applications don't display icons in WindowFinder's menu, you can still switch to a window in one of those applications.



Pick a Window
WindowFinder lets you quickly switch to any window in any application.

plug-ins, because of the way they're written, won't work with Shortcuts.

But some of OS X's own contextual-menu items—Automator items, for example—are made available by built-in plug-ins, so they're available to Shortcuts.

Granted, one issue with contextual menus is that the mouse cursor is often right on top of the target of the desired action, and you're often holding the

mouse in your hand. So wouldn't it be easier to just right-click (or control-click)? If you're a mouser, perhaps. But I'm a keyboard person, and there are times when I use the keyboard for mouse-like things. For example, I often type a few letters of an item's name in the Finder to select it, and I use keyboard commands to highlight text in a text editor or a word processor. In such situa-

tions, reaching for the mouse is what I'm trying to avoid.

There are other contexts in which Shortcuts comes in handy. For example, I previously reviewed NuFile (◆◆◆½; *Mac Gems*, macworld.com/1474), a contextual-menu plug-in that lets you create a new document for whatever application you desire by right- or control-clicking in a Finder window. You can actually use

THE CONQUEST

DiskWarrior is Now OS X Native

It's the indispensable utility that repairs problems such as disks that won't mount, files you can't trash, and folders that have disappeared. *MacUser* magazine said, "It's the fastest and safest data recovery utility you can buy."

Macworld magazine said, "DiskWarrior is by far the best disk utility available for the Mac; it can repair virtually any disk problem you may

encounter...and it is likely to become the only tool you'll want to keep with you at all times."

David Coursey, ZDNet AnchorDesk, agrees in an article comparing disk utilities. He used it to fix a disk that no other utility could. "DiskWarrior is a great product, not just because it fixed a pretty serious screw-up, but because it showed me what it planned to do in minute detail before doing it."

But disk damage isn't the only threat to your data. As hard drives get older, the drive mechanisms

THE UTILITY COMPANY

ALSOFT

Phone: 1-800-257-6381 Fax: 281-353-9868 Email: sales.info@alsoft.com Web Site: www.alsoft.com

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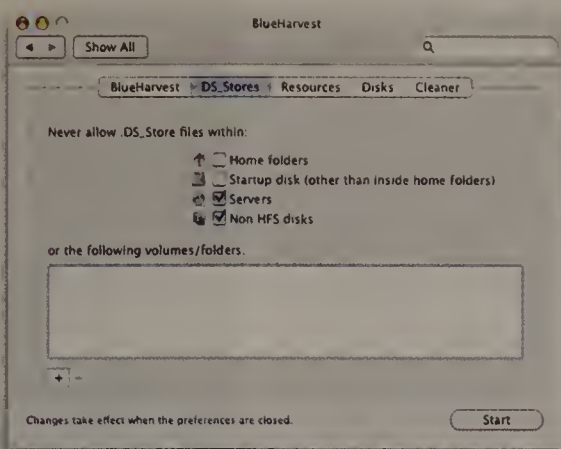
Shortcuts to assign keyboard shortcuts to each document type listed in NuFile's contextual menu. If you prefer using the keyboard to mousing, you'll find Shortcuts to be a nifty tool.

WINDOWS VOLUME CLEANER

BlueHarvest 1.1

Out of the box, OS X can connect to Windows servers and shares. However, as any Windows-centric IT person will tell you, OS X isn't necessarily the best neighbor in the Network Neighborhood. Every time you access a remote Windows share (or an NFS volume), OS X leaves behind .DS_Store detritus—files that are useful, but invisible, to OS X and useless, and completely visible, to Windows users. Also, if you copy a file with a Mac OS resource fork to a non-Mac volume, that resource fork gets copied as a second file. For example, copying a photo with a Finder thumbnail—which resides in the file's resource fork—results in two files. You won't see the second file, but Windows (and some Unix and Linux) users will.

If you frequently interact with non-Mac servers and shares, take a look at



Cleaned Out BlueHarvest keeps unwanted files from ending up on Windows volumes.

ZeroOneTwenty's BlueHarvest 1.1 (★★★★; \$10; zeroonetwenty.com), which works as a System Preferences pane and provides a number of options for keeping non-Mac servers and volumes free of OS X litter. First and foremost, it can prevent the creation of .DS_Store files (actually, it waits until they're created and then deletes them immediately—according to the developer, this is a safer way to handle the situation). But instead of taking a blanket approach, you choose what types of directories should be .DS_Store-free.

Another useful option is to automatically remove the resource forks from files

copied to non-Mac (technically, non-HFS-formatted) volumes. However, because some files need their resource forks when used on a Mac, and you may need to copy such files back to your Mac at some point, BlueHarvest lets you restrict this feature to particular file types such as .txt, .mp3, .html, and most image files—things that don't store important information in their resource forks.

BlueHarvest's Disks screen lets you get rid of several other potentially annoying files left behind on non-Mac disks by OS X: .Trashes, .Spotlight-V100, and .Volume-Icon.icns. And if an application you use creates its own litter, you can add those files to the list so that they'll be cleaned up as well.

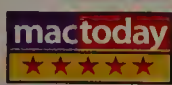
Finally, if you find yourself using an already-cluttered non-Mac volume, drag the volume or a folder onto BlueHarvest's Cleaner screen and it will get rid of all .DS_Store and resource-fork files it finds. Just be careful—it deletes all offending files immediately, regardless of your settings in BlueHarvest's other screens. □

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CONTINUES

begin to malfunction. Eventually, the malfunctions become so severe that the drive simply stops working. DiskWarrior can automatically test for hardware malfunctions, giving you the chance to back up your data before it's too late.

Be prepared. Don't wait until after you have a disk disaster to buy your copy of DiskWarrior. Bob LeVitus, aka Dr. Mac, said, "I feel naked without DiskWarrior." You can believe MacHome magazine when they said, "DiskWarrior is a quick, one-click solution to faster, more stable hard drives."





Digital Video E

How to Pick the Perfect Camcorder and Shoot Like

Drama, laughter, mortal embarrassment—digital video lets you relive the special, and not so special, moments of your life with the mere press of a rewind button. And sharing digital video with other people is easy: you can burn it to a DVD, post it to your Web site, or turn it into a video podcast that they can download right to their iPods. The world is your screening room.

But before you can tap into your inner Spielberg, you need a video camera. To help you find the right one, I'll lead you through your list of options and explain which features make a difference and which you can live without. I'll also share a few surefire tricks for getting great video every time.



essentials

Pro By Richard Baguley PHOTOGRAPHY BY PETER BELANGER

PICKING THE Perfect Camcorder

From pocket-size wonders to shoulder-mounted behemoths, there's a vast and sometimes bewildering selection of camcorders on the market. The key to finding the right model is to look for a camcorder with features you'll use often and features that have a big impact on video quality.

CHOOSE A VIDEO FORMAT

Although MiniDV remains the most popular choice among Mac users, it's not your only option. Base your decision on how much money you're willing to spend, whether you want to edit your video, and how picky you are about video quality.

MiniDV

MiniDV camcorders record up to 90 minutes of high-quality video on a digital tape the size of a matchbox. The tapes are relatively inexpensive—less than \$4 each if you buy in bulk—and widely available. The camcorders themselves range from \$300 to \$1,300, depending on their features.

One reason MiniDV is so popular is the ease with which you can edit its video. Just connect a MiniDV camcorder to your Mac's FireWire port and import the footage into iMovie or another video-editing application. When you're done, you can burn the video onto a DVD or post it to the Web. However, working with tapes can be frustrating. You can't easily jump to the beginning of a new scene, as you can with DVDs. Instead, you'll have to fast-forward or rewind to the appropriate spot. And if you aren't careful, you can inadvertently tape over previously recorded video. (For a review of six MiniDV camcorders, see page 24.)



MiniDV Tape and MiniDVD

MiniDVD

MiniDVD camcorders, which range in price from \$400 to \$1,000, record video onto miniature rewritable DVDs. You'll spend about \$5 per disc. At its highest-quality setting, the typical camcorder can record around 30 minutes of video per disc.

To fit on the DVD, the video must first be compressed. At high-quality settings, the resulting video usually looks pretty good, but not as good as what you'll get from a MiniDV camcorder. The difference is particularly noticeable in scenes with lots of movement, which may look jerky. These problems are amplified if you lower the quality settings to fit more video on a disc.

The main advantage of MiniDVD camcorders is the instant gratification they offer. Once you've finished shooting and the camcorder finalizes the disc, you can pop the disc into almost any set-top DVD



MiniDV Best for Mac users who want to edit their video. Shown: the Panasonic PV-GS300.

MiniDVD Best for people who don't want to edit their video. Shown: the Canon DC100.

Hard Drive Best for people who don't want to carry media. Shown: the JVC Everio GZ-MG505.

Camcorder Glossary

The language of video is complex and filled with technical terms and jargon. Here's a guide to some terms you're likely to encounter.

24p Video is usually recorded at 29.97 interlaced fps, but film runs at 24 progressive fps. Some high-end camcorders have a 24p mode, which records video at 24 progressive fps. While this mode does produce a film-like look, you don't need it unless you really want to be the next Ang Lee. For a guide to 24p video, visit the Zerocut Web site at www.zerocut.com/tech/p24.html.

CCD One of the two main types of camcorder image sensors, *charge-coupled devices* are found on many expensive camcorders. CCDs tend to produce better-quality video than CMOS sensors and are less prone to picking up electronic noise. Some camcorders use three CCD sensors, one each for red, blue, and green.

player—there's no need to upload the video to your Mac first. Plus, you can quickly skip to different scenes, just as you can with commercial DVDs.

However, if you plan to edit the video you shoot, these camcorders probably aren't for you. MiniDVD discs aren't compatible with the slot-loading DVD drives on modern Macs: put one in, and it'll get stuck—possibly damaging your drive. Few of them will let you download video to a Mac. This means you'll need to buy an external DVD drive to read the MiniDVDs—adding another \$120 or so to the price tag. You'll also need a special application, such as Roxio's \$50 Popcorn 2 (www.roxio.com), to convert the video data into the QuickTime format so iMovie and other Mac editing programs can import it.

Hard Drive

If you don't like the idea of tracking down a new tape or DVD every time you want to shoot, you might prefer a hard-drive-based camcorder. These devices record video onto a built-in hard drive. For example,



HDV Best for people who want high-quality video and can pay for it. Shown: the Sony HDR-HC3 Handycam.

CMOS Image sensors using *complementary metal-oxide semiconductor* technology are often found in inexpensive camcorders. CMOS sensors are more susceptible to electronic noise than CCDs; this can result in noisy video in low-light settings. However, thanks to recent developments in image-sensor technology, the quality differences are less significant than they used to be.

iLink Sony calls the FireWire port on their camcorders an iLink port, but the two are compatible.

MPEG-2 This is the format used to store video on DVDs and many hard-drive-based camcorders. Because the format has numerous variations, Mac apps may have trouble correctly decoding these files.

MPEG-4 This compression format provides good-quality video in small files, and it's based partly on Apple's QuickTime technology.

Sony's DCR-SR100 Handycam (www.sonymstyle.com) can hold as much as 20 hours of video on its 30GB drive. However, these camcorders are fairly expensive: plan to shell out at least \$1,000 for one.

And as with MiniDVD camcorders, you'll have a hard time importing the video to your Mac and editing it, because most hard-drive camcorders record video in a format iMovie can't read. However, you can use a program such as Squared 5's free MPEG Streamclip (www.squared5.com) to convert the video into QuickTime files.

HDV

HDV cameras record high-definition video onto MiniDV tapes. Because HD video's resolution is more than four times higher than that of standard MiniDV, HD video looks great. But the technology is still relatively expensive—prices for HDV cameras start at \$1,300. You'll also need plenty of memory and processing power to work with the video, which may mean upgrading your Mac.

HDV camcorders are Mac-compatible, so you can import and edit the video in iMovie HD or similar applications. However, Macs don't currently support *burning* HD DVDs. So you'll need to invest in an external Blu-ray or HD-DVD burner, such as the \$1,000 Philips SPD7000 Blu-ray Disc Recorder expected later this year, or you'll have to convert the video to standard-definition video before burning it to DVD.

The Recommendation

For Mac users who want the option of editing raw video footage to create a polished movie, I recommend sticking with MiniDV or HDV camcorders. However, DVD camcorders are a great option if you just want to pop your recordings into a DVD player, and don't plan to watch or work with that video on your Mac.



Battery Life

TIP Want to make

sure your camcorder doesn't get tuckered out before you do? Check the battery's mAh (milliamp hours) rating—you'll usually find it listed in the specifications or manual. The higher the rating, the more charge the battery can hold.

To extend the life of your battery while shooting, use the viewfinder instead of the LCD screen, and avoid the temptation to play back recently shot footage. If you'll be shooting for a long time, consider buying an extended-life battery. These larger, heavier batteries cost \$50 to \$100 and can double a video camera's battery life. If you are really roughing it, get a solar charger such as the \$279 Brunton SolarRoll 9 (macworld.com/1524).



Viewing Distance When you use the digital zoom, you pay a big price in quality. The image on the left is a scene shot with a camcorder's widest angle; the center image is the same scene shot with the camcorder's 10× optical zoom. On the right, you see what happens when you use the camcorder's 120× digital zoom: although it gets you much closer, the image is so grainy that you can hardly make out the subject.

FOCUS ON THE ESSENTIALS

Once you've chosen a format, you'll need to decide which features are most important to you. Some, such as the image sensor and the zoom lens, have a direct impact on the quality of the video you shoot.

Image Sensor

One of the most important factors in video quality is the size of the camcorder's image sensor. Generally speaking, the larger the sensor, the better the image will look. In our tests of MiniDV camcorders, the Canon Elura 100 (which has a $\frac{1}{5}$ -inch sensor) took better-quality video than the Sony DCR-HC36 Handycam (which has a $\frac{1}{6}$ -inch sensor). Because they can gather more light, bigger sensors also tend to perform better in low-light situations.

Zoom Lens

You can't always get up close to the action you're filming, so having a powerful zoom lens is essential. But manufacturers' claims can be misleading. There are two types of zooms: optical and digital. The optical zoom is more important; it indicates the magnification that the *lens* can produce. The digital zoom, on the other hand, uses electronics to enlarge the center of the image. This cropping effect lowers image quality and can result in blocky, grainy footage (see "Viewing Distance"). I recommend using the digital zoom only if you really need it.

For most people, a 20× optical zoom should be sufficient—it gives you the freedom to switch from a wide-angle shot of a baseball field to a tight shot of an individual player, for instance. If you need a more powerful zoom, consider getting a telephoto converter, an additional lens element that attaches to the front of your camcorder's lens and increases the zoom range. You can usually pick one up for around \$100.

Image Stabilization

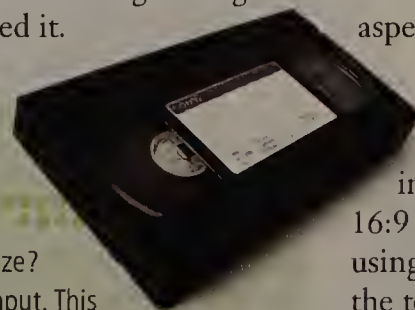
Many camcorders offer image stabilization to help compensate for the subtle shake of handheld camcorder work. There are two types of image stabilization: electronic and optical. Electronic stabilization shifts the image slightly after it has been captured, while optical stabilization moves a part of the lens to compensate for the movement. Optical stabilization does a more effective job, but it's more complex and is found only on pricier camcorders. However, if you're going to be shooting a lot of handheld footage (or if you often use the zoom lens), optical stabilization is worth the extra money.

Aspect Ratio

By default, most camcorders shoot video with a 4:3 aspect ratio (which means that the ratio of width to height is 4 to 3). That made sense when most television sets also had a 4:3 ratio, but these days, more and more TVs use the wide-format 16:9 ratio. To make the most of these wide screens, many video cameras now offer the option of shooting video with a 16:9 aspect ratio.

If you plan to watch your home movies *exclusively* on a wide-format TV, the ability to shoot at 16:9 is an attractive option. For the best image quality, look for a camcorder with a true 16:9 image sensor—some try to fake 16:9 video by using a traditional 4:3 sensor and merely chopping off the top and bottom of the image (see "Wide Load"). But keep in mind that 16:9 video won't look very good on standard TVs, as the image will be much smaller than if you had shot it with a 4:3 aspect ratio. If you plan to send your movie off to relatives and friends who may not have wide-screen TVs, you may want to stick with 4:3 video.

Convert Old Movies



TIP

Do you have old VHS tapes that you'd like to digitize? If so, look for a camcorder with an analog video input. This plug lets you turn your camcorder into a video converter. Just connect your VCR to the video input and record the video to the camcorder's digital tape. When you're done, connect the camcorder to your Mac and import the video into iMovie. For a step-by-step guide to converting old movies, see "From Tape to DVD" at macworld.com/1102.

LCD Screen

The camcorder's LCD screen is often the most convenient way to watch what you're recording, so you should get one that provides a good view of your video. A two- or three-inch screen should be large enough for most people. Anything larger will waste battery power without offering much additional benefit. (To show off your video to a group, you can hook up the camcorder to a TV.)

If you are planning to shoot 16:9 video, get a camcorder with a wide-aspect LCD screen, which provides a better view of the video.

PRIORITIZE EXTRAS

Some camcorders come loaded with extra features and special effects—but not all of them are worth the added cost if you have a tight budget.

Shooting Modes

Like digital still cameras, most camcorders offer shooting modes that tailor the camera's settings to specific situations. A sports mode, for instance, increases the shutter speed to better capture fast-moving objects, producing sharper video. But be realistic about which modes you're likely to use—most people will use only a few. The Sony HDR-HC3 Handycam, for example, offers a slow-motion mode that captures three seconds of video at 80 frames per second (fps). That's great for a golf player hoping to analyze a golf swing, but it's not very useful for filming a family reunion. However, almost all users will benefit from sports, portrait, and night modes.

Still-Image Capture

Most video cameras can capture photos, too. While this can be a useful feature, don't expect to get the same quality that a dedicated still camera delivers. The image resolution on most camcorders tops out at 2 or 3 megapixels, and you can pick up an 8-megapixel still camera for around \$300.

Some camcorders (such as the Sony DCR-HC36 and Panasonic PV-GS300) can record still images and video simultaneously, but the image resolution—

Still Camera versus Camcorder



If you mostly take photos but occasionally want to capture video, you may be better off investing in a high-quality digital still camera that also records

video. You can download this video—which is usually saved as QuickTime or MPEG-4 files—directly into iMovie and edit it as you would any other video footage.

Just keep in mind that video quality varies from camera to camera. For best results, look for a camera that captures video at a resolution of 640 by 480 pixels and a frame rate of 30 fps. It should also have a microphone on the front for recording audio with the video. Of course, the video from even the best still camera isn't as good as what you'd get from a dedicated camcorder—camcorders have better microphones that can record stereo sound, and they tend to produce smoother video. But a good still camera should be adequate for the occasional clip.

If you're looking for a true hybrid device, consider a flash memory camcorder such as the \$500 Sony Cyber-shot M2, which records both 5-megapixel still images and video to flash memory cards. Although not as good as their dedicated cousins, these hybrid devices do an admirable job of capturing pictures and video, and they're small and easy to carry.

640 by 480 pixels—is about what you'd get from a cell phone camera. Most others require that you switch between recording modes—virtually guaranteeing that your subject will have become bored and wandered off by the time you're ready to shoot.

If you plan to take a lot of photos or are picky about quality, you'll be better off getting a digital still camera. They can also capture video (see "Still Camera versus Camcorder").

Manual Controls

Some expensive camcorders give you full manual control over shutter-speed and aperture settings. This can



Wide Load The image on the left is a scene shot with the standard 4:3 aspect ratio. The center image was shot with a true wide-screen 16:9 aspect ratio—it shows more of the scene and looks better on wide-screen TVs. But beware of camcorders that try to create the illusion of wide-screen video by simply adding black bars to the bottom and top of the image (a practice called letterboxing), as in the image on the right. You're actually seeing less than you would with standard video.

Lights Out The image on the top shows video shot in a Sony camcorder's normal mode at dusk: the subject is barely visible in the low light. The image on the bottom was shot using Sony's Color Slow Shutter mode. You can see a lot more of the subject, but the resulting video is very jerky. An even better option is to use an external light to illuminate the scene.



help you compensate for difficult lighting situations that may confuse the camcorder's automatic settings (such as the glare of the sun shining on sand). But it's overkill for most people. If you're shooting home movies of the kids, you don't need manual controls.

Night Vision

Lots of interesting things happen in the dark. How well your camcorder captures them will depend on the type of low-light mode it uses.

All video cameras offer a *passive* mode for capturing low-light scenes. In this mode—called the MagicPix mode on Panasonic camcorders and the Color Slow Shutter mode on Sony models—the camcorder slows the shutter speed to capture more light. While this greatly increases the light sensitivity of the camcorder, it also results in grainy, jerky video (see “Lights Out”). Some camcorders take this a step further by including an infrared LED, which emits light that the human eye can't see but that the camera's sensor can (on Sony cameras this is referred to as NightShot mode). The resulting green-and-white video looks like what you'd see through night-vision goggles, but is less jerky than slowing the shutter speed.

Some camcorders also offer an *active* mode, which adds more light to a scene. Typically, this light comes from a small LED on the camera body (with Panasonic camcorders, it comes from the backlight of the LCD screen, which you rotate to illuminate the subject). These lights do a better job of illuminating nearby subjects, but they aren't very bright—they reach only a few feet. You'll get much better results by investing in an external light that attaches to the camcorder's hot-shoe (see “The Filmmaker's Rule Book” for more lighting advice.)

GET HANDS-ON EXPERIENCE

Now that you've decided which features you need, you should be able to narrow the selection of camcorders to a manageable number. But before you make a purchase, go to a store that offers a good selection, pick them up, and try them out.

First consider how well the camcorder fits into your hand, and whether the controls are within easy reach. Practice using the record and zoom buttons. You should be able to reach them with your fingertips without the camcorder shaking or dipping. You should also think about the weight of the camcorder. While larger models like the Panasonic PV-GS500 offer more features, they're also much heavier.

In bright sunlight, you may have trouble seeing the camcorder's LCD. In that case, you'll need to use the viewfinder. Make sure it's comfortable to use—particularly if you wear glasses—and that the battery doesn't get in the way. You may prefer a viewfinder that extends and tilts.

Finally, before you put down any money, take the time to read reviews of your top picks. All the features in the world won't do you much good if the camcorder shoots terrible video. For reviews of MiniDV camcorders, see page 24. For more digital video gear and advice, go to macworld.com/1547.

5 Accessories Every Camcorder Needs

While you're at the store, don't overlook these digital video essentials.

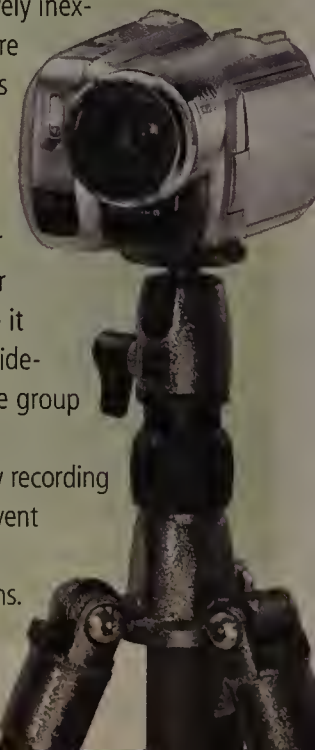
Tripod A decent tripod holds the video camera steady, resulting in sharper video and smoother movement. If a tripod is too heavy, consider a monopod. Though smaller and lighter, this one-legged tripod provides a steady platform.

Carrying Case Camcorders aren't cheap. Keep yours protected by investing in a good carrying case.

Spare Battery Although relatively inexpensive (most are about \$30), a spare battery can save the day by acting as a backup if you run out of juice halfway through a shoot. Just remember to keep it charged.

Wide-Angle Adapter Camcorder manufacturers focus on making their zoom lenses longer, which can make it harder to get the whole picture. A wide-angle adapter makes it easier to take group portraits, for example.

Head-Cleaning Tape A grungy recording head can lead to glitchy video. To prevent this, run a head-cleaner tape through your camcorder every couple of months.



THE FILMMAKER'S Rule Book

When it comes to making movies that people will actually want to watch, getting a good video camera is only part of the battle. You also need to know how to use your camera. Shaky video, muffled audio, and wild camera movement can ruin your movie—and exasperate your viewers. For video you can be proud of, follow these ten simple rules:

RULE 1: KNOW YOUR CAMERA

A roller-coaster isn't the best place to learn how to use your new camcorder—and neither is your daughter's wedding. Before you set out on a trip or show up at a big event, become familiar with how the camcorder works. Practice changing tapes and accessing important functions, and experiment with different shooting modes. The more comfortable you are with your camera, the better your chances are of getting the shot when it really matters.

RULE 2: USE A TRIPOD

Few things are more irritating to viewers—or more emblematic of amateurish filmmaking—than jerky video caused by the cameraperson's shaky hands. To see an immediate improvement in your video's quality, use a tripod or monopod whenever possible.

If you don't have a tripod handy, brace yourself against a wall for added support. Hold the camcorder with both hands, keep your elbows close to your body, and use the viewfinder to frame the shot: you'll have an easier time keeping the camcorder steady if you hold it against your face.

RULE 3: ZOOM AND PAN SLOWLY

Quick camera movements can be very disorienting. To ensure that your relatives don't become ill while watching your vacation films, slow down when zooming or panning.

Zooming You should take at least 30 seconds to complete a full zoom (moving from the camera's widest angle to the end of its optical zoom). And be careful to keep the camera steady throughout. By taking your time, you'll also help keep the video in focus: quick zooms can confuse the autofocus feature, resulting in a blurry mess as the camcorder tries to catch up.

Panning Camera movements should also be slow and smooth. It's difficult to appreciate the beauty of a long tropical beach in three seconds, so take your time when panning. If you're worried about pacing, take the shot again at a different speed. When you edit, you can choose the clip you like best.

If you're following the movement of a fast object (such as a sports car or a football player), the panning motion should come from the hips, not from the hands. As your upper body follows the action, keep your elbows locked to your side and watch the scene through the viewfinder, not the LCD. This will help keep the action smooth. To prevent jerky camera movement at the beginning of the shot, start panning before you press the record button. As you pan, try to keep the subject in the center of the frame.

Most importantly, never zoom and pan at the same time—that's guaranteed to nauseate viewers.

RULE 4: SKIP THE SPECIAL EFFECTS

Most camcorders give you the option of applying effects—such as fades, black-and-white, and sepia tone—while shooting. Don't use them if you plan on editing your movie later. You'll have a wider range of options and get much better results by applying effects in a video editor such as iMovie. Plus, you can undo the effect if you later decide you don't like it; when you apply a special effect while shooting, you're stuck with it.

DIY Fame

TIP Want the world to see your latest masterpiece? Put your movie online, where anyone with an Internet connection can view it. If you have a .Mac account and iLife '06 (\$100 and \$79, respectively), you can use iMovie and iWeb to publish your movie. Another option is to use a free online video-hosting service such as YouTube (www.youtube.com) or VideoEgg (www.videoegg.com). These sites provide Mac software that automates the process of converting and uploading video to their servers or to your own Web site.



Sharing Is Caring On sites such as YouTube, other people can comment on your footage and rate it.

First Aid for Bad Footage

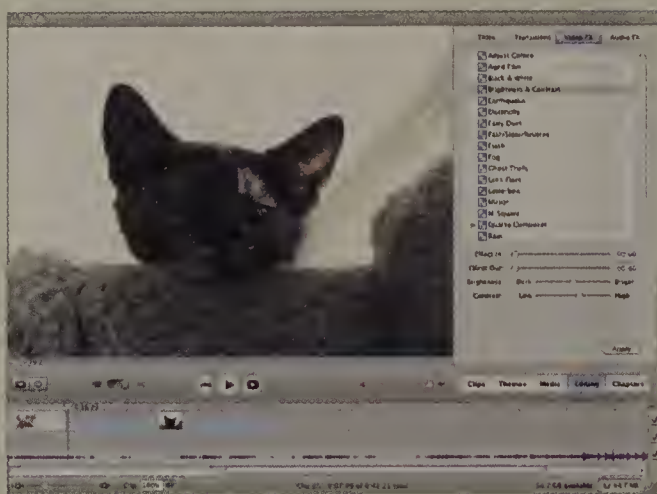
If you get back from your trip and find that your video doesn't look or sound as good as you thought, don't panic. iMovie HD includes a number of filters that can correct common problems.

Noise Reduction

The Noise Reducer feature filters out annoying background sounds while preserving important stuff such as voices. To

access it, click on iMovie's Editing button, select the AudioFX tab at the top of the window, and select Noise Reducer from the list of effects. Move the slider to the right to be more aggressive in removing noise. Use the Preview button to test the results.

Fix Colors For video that is too dark or too light, try iMovie's Brightness & Contrast filter, which adjusts the video's exposure. To correct for a color cast (for instance, if you moved from outdoors to indoors without adjusting your camcorder's settings), try the Color Adjust filter, which shifts the video's color balance. For example, drag the Hue control to the left if your colors look too green, or to the right if they look too red. You'll find both filters in the VideoFX section of the Editing pane. They can't work miracles, but they can do an effective job in many cases.



Dim the Lights iMovie's Brightness & Contrast filter can do much to help improve badly exposed video.



Say What?

TIP You'll get far better sound from an external microphone. But to connect one of these mikes, you'll need a camcorder with a microphone input (in most cases, it's a 1/8-inch stereo minijack, although some camcorders have their own proprietary connections).

RULE 5: GET A DECENT MICROPHONE

Although adequate for general use, most camcorders' built-in microphones don't do a very good job of picking out a voice from a crowd or recording someone talking from a distance. To get sound that you can be proud of, invest in an external microphone.

One option is to get a zoom microphone, such as the \$70 Sony ECM-HGZ1 Shotgun Microphone, which clips onto the camera body and synchronizes with the zoom to better isolate the sounds made by the subject you're zooming in on. This can make a big difference, especially in situations such as concerts and lectures.

Another option is to invest in a wireless lapel microphone, which clips onto the subject's shirt and transmits audio to the camera. These can be expensive (anywhere from \$80 to several hundred dollars), but they do a much better job of recording voices.

RULE 6: SILENCE THE WIND

Although it may not sound like much to you, wind can wreak havoc on an unprotected microphone, leaving you with a video in which the only audible sound is rushing air. Some camcorders include a *wind cut* feature that attempts to filter out this noise. But it can't work miracles—voices will still be drowned out.

Whenever possible, try to shield the microphone from wind by blocking it with your body or by covering it with a thin piece of fabric, such as a T-shirt.

RULE 7: ADD LIGHT

Although most camcorders come with built-in lights, they're pretty weak. If you're shooting in a poorly lit room, consider getting a separate light that mounts onto the camcorder's hot-shoe (such as the \$40 Sony HLV-HL1). Another option is to buy a couple of tripod work lights from a home-supply store to light the scene. For example, Wel-Bilt makes a 500-watt model that sells for around \$40. For more lighting advice, check out Bill Holshevnikoff's *The Power of Lighting for Film and Video* DVD series, which explains how video professionals light their scenes (\$35 each; www.power-of-lighting.com).

RULE 8: AVOID BACKLIGHTING

Camcorders can't pick up the range of tones that the human eye can. So if you position someone against a bright background (such as a sunny sky), the camera will expose for the bright light—turning the person in the foreground into a silhouette. If possible, avoid pointing the camera directly at a light source. Instead, move around so the light is to your right or left. (Don't shoot with your back to the light, as your subject will then have to squint to see you.) If you can't move, see whether your camcorder offers a backlight control, which changes the exposure to compensate for backlighting. You'll usually access this feature via the LCD menu or, in some cases, by pushing a backlight-compensation button on the outside of the camcorder.

RULE 9: USE MULTIPLE TAPES

MiniDV tapes are relatively inexpensive, but memories are priceless. Rather than trying to squeeze an entire vacation onto one videotape, use a fresh tape every day. At the end of a full day of shooting, flip on the tape's write-protect switch and store the tape somewhere safe. This way, if your camcorder is stolen, you won't also lose several days of video.

RULE 10: KEEP SHOOTING

It's always better to shoot more video than you think you need. If you're visiting a picturesque location, take video from several different angles, letting each shot run for at least 30 seconds. People in the business call these establishing shots: they give the viewer a sense of place. □

Want to know more? Check out our podcast with author Richard Baguley at macworld.com/1529.

RICHARD BAGULEY has reviewed digital camcorders and cameras for *Macworld* and *PC World*.

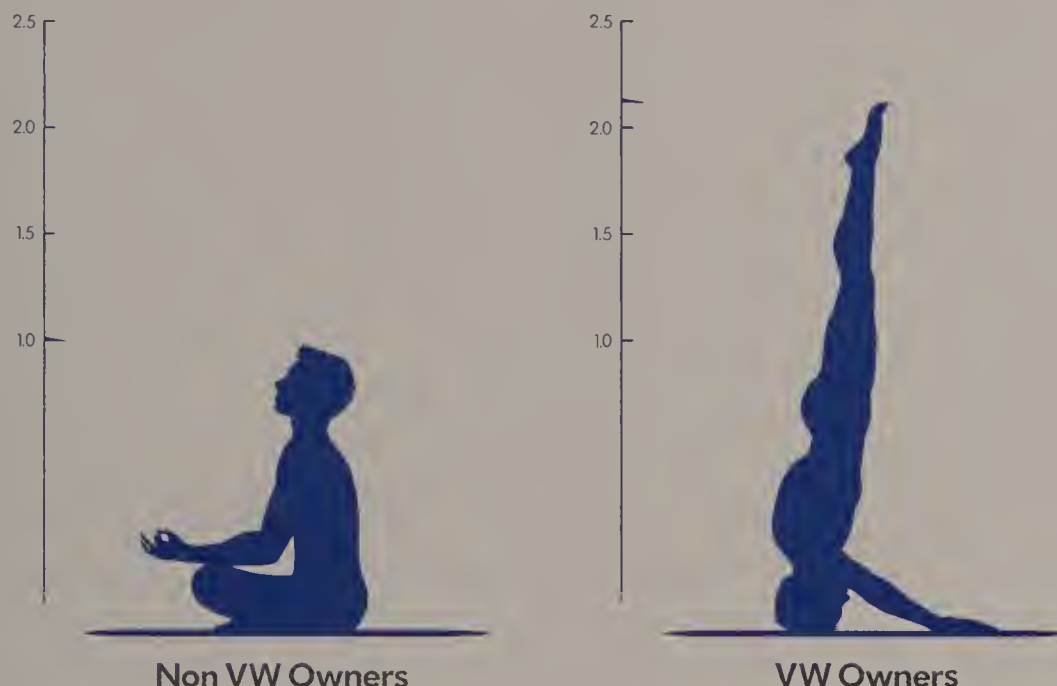


INTO KNOT YOGA



Not that we need to remind you, after all, if you're reading this you're probably already 30% more likely to recycle.

There's nothing Zen about stereotypes.



Yes, it's true. Volkswagen owners are 115% more likely to do yoga. But that does not make it okay to stereotype Jetta owners as fit people with deep, inner-strength. If you're a Jetta owner, this sticker is here to help. Once affixed to your Jetta, this sticker will make it clear that you don't know a downward facing dog position from an upward facing dog position. And quite frankly, you're tired of complete strangers assuming you do. But soon, everyone will understand that stereotypes are pretty stupid, and that a Jetta owner can be into all sorts of things. Like snorkeling, or bumper-sticker-activism. TheJettaReport.com



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-----> By Christopher Breen

the multimedia mac mini

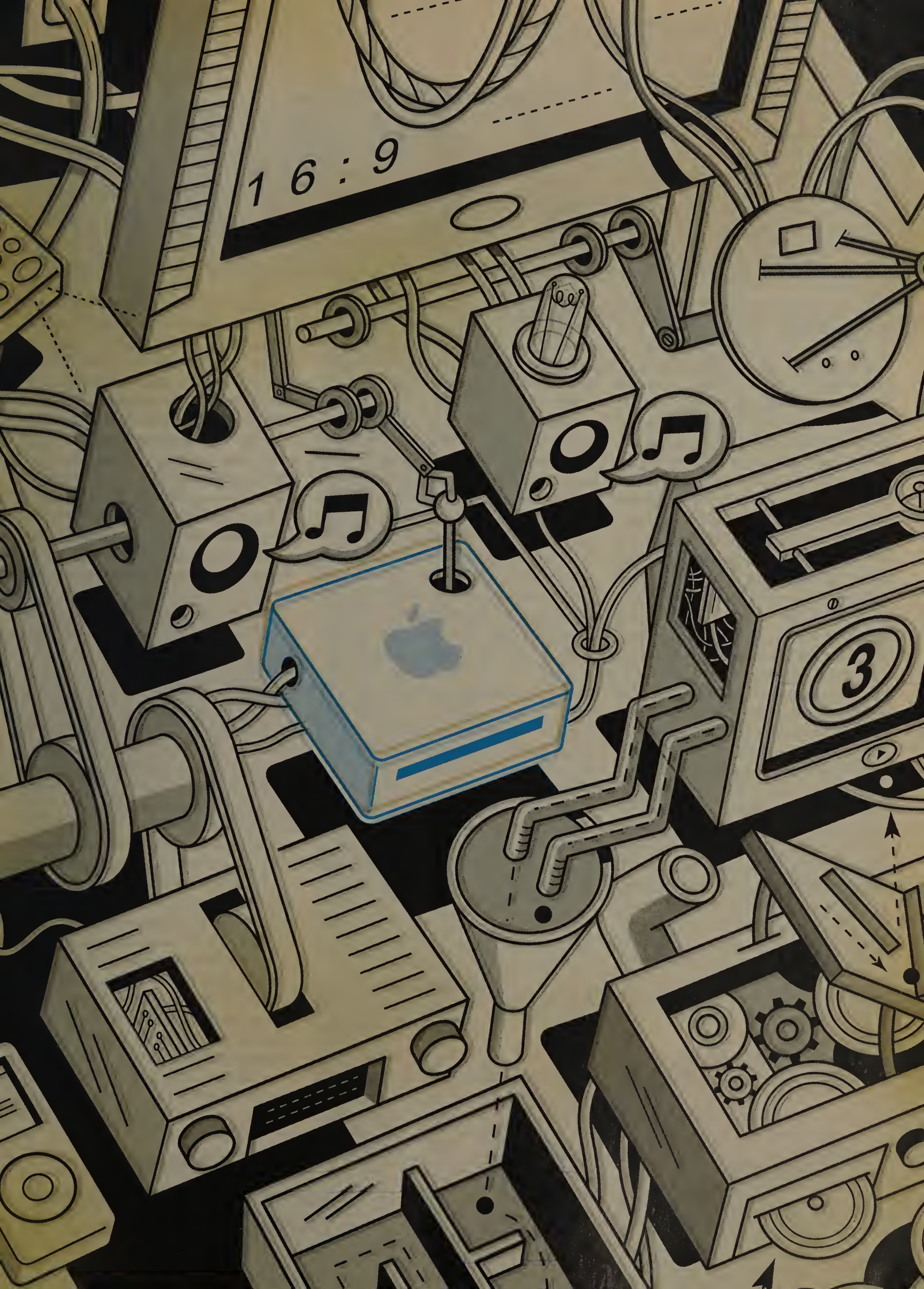
Is Apple's Compact Computer
Ready to Rule Your Living Room?



With the introduction of the iMac G5 and its accompanying remote control and Front Row media-browser software, Apple hinted that the Mac was ready to add a new skill to its resume—multimedia center. But the iMac wasn't really up to the task of replacing a cabinet full of audio and video gear. Among other things, the iMac's display was too small for a large room, and its very high resolution meant that TV shows, which are broadcast at a lower resolution, ended up hazy and pixelated.

What the job required was an inexpensive Mac that had the same multimedia features as the iMac but *didn't* have a display. Apple provided such a product with the Intel-based Mac mini. Unlike the original mini, this Mac supports infrared remote control; includes Front Row (the latest version of which can also play shared media); and offers digital surround-sound audio output, four USB ports, and an optional dual-core processor. Is this Mac the answer? It still has some shortcomings, but when outfitted with the right peripherals, the mini performs admirably as the brains of your home media center. ▶▶

ILLUSTRATIONS BY HARRY CAMPBELL



Apple makes it clear that when you purchase a Mac mini, you get a computer with basic software (including iLife '06), a power supply, and Apple's remote control—the rest is up to you. To use it as a computer, you'll just need a keyboard, mouse, and monitor. But to make it the center of a media setup, you'll need extra hardware and a way to connect everything. Come see how the pieces fit together.

The AV Connection

The first step to building a fully functional media center is connecting your mini to your audio and video components.

Standard TV Most modern standard-definition TVs offer three types of video input—antenna or coaxial cable, composite, and S-Video (see “Cables and Connectors” for the full variety of options). You can connect the mini to either of the latter two ports with Apple's DVI to Video Adapter (\$19; www.apple.com). This adapter converts the mini's digital DVI signal for use with analog composite video and S-Video cables (not included). If you have a spare S-Video port on your TV, use it—S-Video offers the better picture quality of these video sources. When you boot the mini, it will recognize the adapter and adjust the resolution to 800 by 600 pixels. The picture will be a bit squished and fuzzy, but clear enough so that you can see what you're doing as you pull down menus, open folders, and navigate through applications.

HDTV Because high-definition TVs have digital inputs and wide screens, they are ideal for watching content such as DVDs or HD movie trailers. But connecting the mini to an HDTV can be a bit of work in some cases, due to the variety of HDTVs and inputs available, as well as any finessing

Cables and Connectors



required to get the mini to fill the entire screen. Typically, you'll need either a standard DVI cable or a DVI-to-HDMI cable, but some older HDTVs don't have those ports. For more on connecting a mini to an HDTV, see “HDTV Woes.”

Stereo The mini's audio output is actually two ports rolled into one. It lets you connect the mini to analog stereo equipment or powered speakers, using a minijack-to-minijack cable or a minijack-to-RCA cable (also known as a Y-cable because of its shape). But the mini can also send out a digital 5.1-channel signal from the same port, using an optical (or Toslink) digital audio cable. Because of the port's size, however, you can't use a cable with a standard Toslink connector on both ends. Instead, you'll need a cable with a snap-on plug tip for the mini, such as Belkin's PureAV Digital Optical Audio Cable with Mini-Toslink Adapter (\$30; store.apple.com) or Griffin Technology's Xpress Cable (\$20; www.griffintechnology.com).

TV Time

If you're planning on using the Mac mini as a TiVo-style digital video recorder (DVR), for both playing live TV and recording programs to watch later, you'll need to add some hardware capable of converting video

to a format the Mac can understand, and software that lets you control and watch it.

The Goods Elgato (www.elgato.com), Miglia (www.miglia.com), and Plector (www.plector.com) all sell compatible hardware that comes with Elgato's EyeTV 2 software (ⓂⓂⓂⓂ; macworld.com/1239) for watching live TV, recording TV programs, and creating schedules for your recordings. Each product connects to your video source and, in most cases, uses a built-in hardware encoder to convert the signal to MPEG-1 or MPEG-2, and passes it on to your mini via USB 2.0 for viewing or recording. In my testing, these devices delivered a picture slightly inferior to that of a regular TV signal when zoomed to fill the screen. Some artifacts were evident, but the resulting picture was very watchable.

Digital Divide The software makes it easy to change channels when you're using any EyeTV-powered hardware with analog cable TV, an antenna signal, or even free over-the-air HD signals with the \$250 Miglia TVMini HD (ⓂⓂⓂⓂ; macworld.com/1507), which the Core Duo Mac mini has the horsepower to run. You can change the channels either manually or by scheduling recordings via integration with the TitanTV listing site (www.titantv.com).

These DVRs fall short in comparison to a dedicated TiVo, however, when it comes to digital cable or satellite TV decoder boxes. A stand-alone TiVo includes an infrared blaster—a device that relays an infrared signal from the TiVo to a cable or satellite receiver, using two LEDs—for changing channels on such boxes. Computer-based recorders don't have this feature. And the EyeTV software lacks some



TV is important, but your mini needs to be a DVD player, too.

of TiVo's features, such as smart scheduling and program recommendations based on your tastes. On the other hand, it can convert recorded video to an iPod-compatible portable format—a capability not currently available to Mac-using-TiVo enthusiasts.

To solve the channel-changing problem, you'll need a USB IR blaster and Vidcan Media Solutions' iEye Captain (\$30; www.vidcan.com). The latter acts as an intermediary between EyeTV and the blaster's software—turning the schedules you've created in EyeTV into iCal events via some clever AppleScripts, and then firing the blaster with the proper codes at the time of each scheduled event.

There are two such Mac-compatible IR blasters: IRTrans' IRTrans USB (€99; www.irtrans.de/en) and studioZee's USB Zeph-IR (\$65; www.thezephir.com). IRTrans' iRed software is easier to configure and use, but the Zeph-IR ships with far more preconfigured profiles for remotes (and Zeph-IR's developer says that he'll create profiles on request). You can save some money by buying a bundle



The IRTrans USB (top) and the Zeph-IR

of iEye Captain and one of the blasters (see macworld.com/1479 for details). With either product, you'll need to install the software, plug the blaster into a USB port, and either pick your remote from the blaster's library of devices (if available) or configure it yourself.

Once you've configured the IR blaster's software to emulate your remote, you create your schedules in EyeTV, using each schedule's Description field to tell iEye Captain what channel the program is on. iEye Captain takes care of the rest.

Flicks on Discs

TV is important, but let's not forget that your Mac mini needs to play other types of video to function as a true media center. If your Mac mini is the only video component connected to your TV, it also has to function as a DVD player. Of

HDTV Woes



One of the big things the Mac mini has going for it is its video output.

The pure digital video signal from its DVI port offers startling clarity that no analog connection can match—especially when paired with an HDTV. With a standard DVI cable, you can connect the mini to an HDTV via a DVI port and achieve the best quality and resolution your TV has to offer.

Unfortunately, not that many HDTVs include DVI connections—you're more likely to come across a High Definition Multimedia Interface (HDMI) port when you look at the back of your massive TV. Luckily, HDMI and DVI are technologically similar, the only difference being that HDMI combines the DV signal with 5.1-channel audio into a single cable. Because of that, the connections are slightly different, but with an inexpensive DVI-to-HDMI cable, you can bridge the technology gap.

Many people just need an adapter to reap all the benefits of a digital connection. Some other folks find that the mini and their HDTV don't quite sync up when connected via a DVI-to-HDMI adapter (check out the thread dedicated to Mac mini display issues on Apple's support site, at macworld.com/1481).

The most common problems occur when the HDTV's native resolution isn't one that Mac OS X offers. For instance, the mini may offer a resolution of 1,280 by 720 pixels (a common HDTV resolution, also known as 720P), while your LCD flat panel might have a native resolution of 1,366 by 768 pixels. The result is a strip of unused pixels around the edge of the display. Other users report just the opposite problem: the HDMI cable causes the picture to bleed past



the visible edges of the monitor—this is called *overscanning*, and it becomes most apparent when you're using the HDTV to access OS X.

Some people have managed to get around these problems by adjusting the resolution manually with utilities such as Harald Schweder's DisplayConfigX 1.0.9 (free; www.3dexpress.de) and Stéphane Madrau's switchResX 3.7.4 (€14; www.madrau.com). With these tools, you can tweak the interface to accept any resolution, and even delve into details like refresh rates. (For more on HDTV setup, see macworld.com/1528.)

Of course, no fix is ever *that* easy. The resolution tweaks can cause your mini and your monitor to stop communicating altogether, so you end up with a blank screen. If you tweak your settings with DisplayConfigX or switchResX, it's best to have a second monitor on hand; you can use it to reset the supported resolutions and then connect the HDTV again.

I've seen a lengthy list of other problems related to DVI-to-HDMI adapters, including completely blank screens. And connecting the mini to an older HDTV, one that has analog component inputs as its highest-quality option, can be even more challenging because it's difficult to find the hardware to convert the signal correctly (and inexpensively). Even once you've located it, you may run into some of the same problems that you'd encounter with DVI-to-HDMI cables.—MICHAEL GOWAN

course, you can play DVDs on any new Mac, and it works just the same connected to a TV as it would hooked up to a computer display. Your experience will vary depending on your type of TV and stereo and the cables you use to connect them to the mini.

The Apple Remote and Front Row software let you launch DVDs, navigate their menus, and use basic playback con-

trols (but they don't provide slow-motion or frame-by-frame movie playback, which Apple's DVD Player software offers).

One fly in the ointment is that you can control only movie volume with the AV receiver's remote control—the Mac's overall volume controls (including those in Front Row) hold no sway over digital audio output. You can, however, control volume



from within applications—using iTunes' or DVD Player's volume sliders, for example—but those options are not ideal.

Video from Afar

Front Row has no problem seeing or playing any QuickTime-readable video files in your Movies folder. One particularly welcome feature of Front Row's latest version is its ability to play shared videos, as well as music and iPhoto slide shows. This is especially useful for the Mac mini, on two fronts: First, it makes turning the mini into a media center easier, since it can draw content from the rest of your network. Second, it allows you to set up the mini as a player, wirelessly connected to a media server with roomier hard drives—a good idea, since movie files can quickly fill up the mini's small hard drive (60GB or 80GB).

Wireless World Regrettably, this sharing feature doesn't work as well as it should.

File size, the speed of your network connection, and file encoding influence how successfully you can stream media from one Mac to another. In my tests I was able to stream iTunes music files reliably and easily over an AirPort Extreme connection—though it took Front Row on the mini a minute or so to see the other Mac and load its library. Streaming movies from that same Mac via Front Row proved impossible—Front Row gave up after a few minutes of churning away, claiming that the server had a problem.

Boosting the wireless signal by creating an extended wireless network with an AirPort Express base station helped. This provided a strong enough signal so that I could stream music videos purchased from the iTunes Music Store. Alas, streaming longer programming often resulted in server errors or stuttering playback.

Plugging In Creating a HomePlug network with two of Belkin's Powerline Ethernet Adapters (\$60; www.belkin.com) worked much better. These small adapters plug into electrical sockets and send data at speeds of up to 14 Mbps over your electrical wires. The setup is a cinch: plug the adapter into a nearby socket, string the included Ethernet cable between the adapter and each Mac's Ethernet port, enable Ethernet in the Network preference pane, and choose Using DHCP from the Configure IPv4 pop-up menu.

With the HomePlug devices, the mini was able to play iTunes episodes of *Weeds* and *Lost*, streamed from the remote Mac via Front Row. It choked, however, on a 90-minute *Saturday Night Live* collection from the iTunes Music Store. It also couldn't play a 2.69GB MPEG-4 file of *It's a Mad, Mad, Mad, Mad World*, at 2 hours and 42 minutes, encoded with HandBrake (free; handbrake.m0k.org).

Before taking the next step and moving to a direct wired connection, I experimented to see just what effect Front Row had on the proceedings—as it turned out, it had a great deal more than I expected.

I discovered, for example, that I could play previously unplayable Front Row streaming videos by opening them directly in iTunes. For instance, the SNL



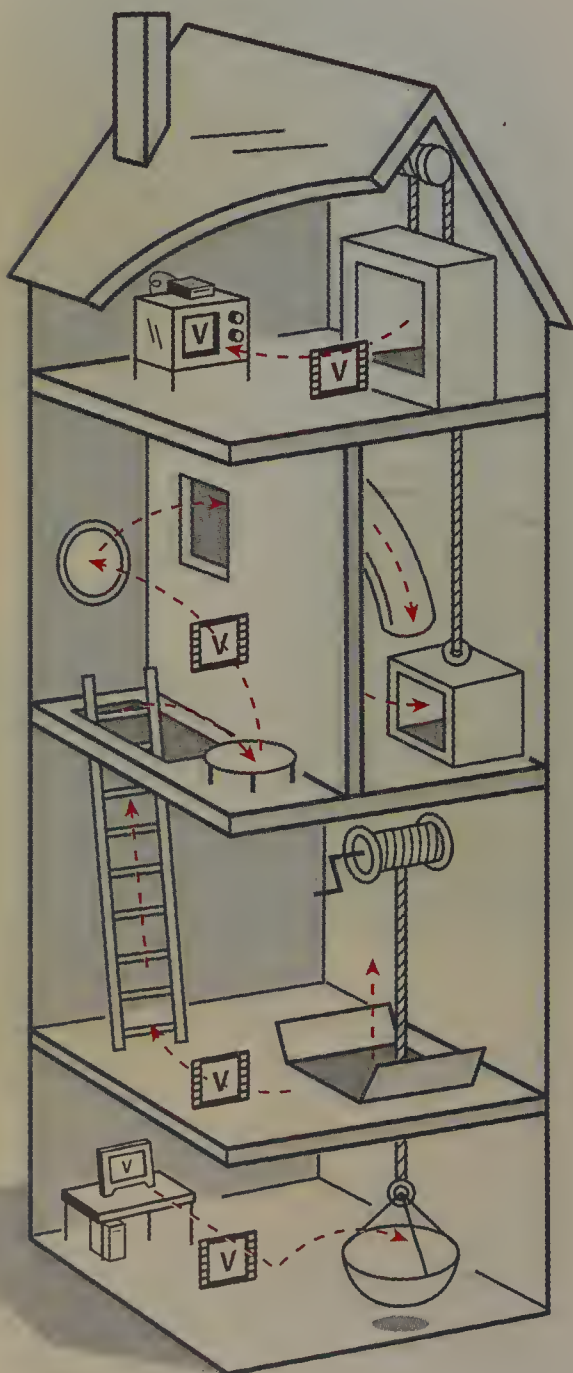
The Belkin Powerline Ethernet Adapter

collection played over the HomePlug network when I chose it from the shared library in iTunes.

Eliminating iTunes' Shared entry items altogether yielded even greater success. I mounted the network volume that housed several movies and copied an alias of the *SNL* collection from the server Mac to the mini's Movies folder. I then fired up Front Row, selected Movies, and chose that alias from the mini's Movies entry. It played without a hitch. Using this technique, I was even able to open *It's a Mad, Mad, Mad, Mad World* within Front Row. It initially stuttered over the HomePlug network, but after 30 seconds or so, the video played back smoothly.

Wired Up Running wire—100 feet of Cat-6 Ethernet cable from one Mac to another—offered improvements as well. In this wired world, all the iTunes television shows played within a shared Front Row environment. The aliased version of the full-length movie loaded via Front Row and also played immediately. But the shared version once again refused to load.

It turns out that Front Row movie sharing works best when the movies you intend to share have been encoded with streaming in mind (an option HandBrake doesn't offer). Even with streaming enabled, full-length movies shared via Front Row work only with a fast connection (a wired Gigabit Ethernet network), not over AirPort. And long movies—exceeding two hours, for example—must be encoded at lower bit rates. (For details on how to best stream movies via Front Row, go to macworld.com/1480).



Front Row's latest version lets you play shared videos, as well as music and iPhoto slide shows.

The Sweet Sounds

Video may be the first thing people think of when they consider setting up a media center, but another major aspect is music—be it in the form of iTunes, terrestrial radio, or even Internet radio.

Music to Your Ears As you'd expect, the Mac mini offers access to your entire iTunes music library via Front Row. For basic playback and for picking items from a long list of songs or artists, it performs pretty well (and it will let you play purchased music—something other media players can't do—as long as you've authorized the mini to play the files).

But controlling iTunes with Front Row isn't like using iTunes itself. Although Apple added new shuffling choices to the latest Front Row update, the software still provides no way to use iTunes' browser or search field to find the music you want, and it can't access the iTunes Music Store either.

Catch an Airwave With the assistance of Griffin Technology's Radio Shark (\$70; www.mactrader.com/1527), your mini can also tune into and record local AM and FM radio. The Radio Shark plugs into a USB port, and you pick stations through its software, which also lets you record live programs and create schedules for recording upcoming programs. The Radio Shark's reception can be finicky, so it's worth your while to move it around in the hope of picking up a more reliable signal.

Net Sounds Maybe streaming radio is your thing—this cool technology lets you listen to broadcasts far outside your geographical area via the Internet. Check out RadioTime (www.radiotime.com), a free Web-based service that offers more than 50,000 music, sports, and talk stations from around the world, channeling the stream through Apple's QuickTime Player, Microsoft's Windows Media Player, or RealNetworks' RealPlayer (depending on the stream's format). For \$39 a year, RadioTime will let you schedule and record programs as well.

Here's the bad news: the current (and final) version of Windows Media Player for Mac doesn't work with RadioTime's software—and a majority of streamed radio stations offer only the Windows Media format. And the alternative, Flip4Mac's free WMV component, which lets QuickTime play Windows Media content (www.flip4mac.com), currently won't work on Intel-based Macs at all (an upcoming Universal version will fix this problem).

However, RadioTime offers enough programs in RealPlayer and MP3 formats to keep your ears busy and let you play and record plenty of content. Plus, you'll find many programs—such as National Public Radio (NPR) broadcasts—on multiple stations, some of which stream their content as RealPlayer and MP3 files.

Helping Hands

No Mac is a media center if you have to control it with a wired keyboard and mouse. Cute and cuddly though the Apple remote may be, at times you'll want to navigate around the Mac in ways forbidden to the remote. For this, you need extra help.

Should you wish to remain in the Apple camp, you can achieve your goal with Apple's Wireless Keyboard and Wireless Mouse (\$59 each). The range of these Bluetooth devices is good enough to control the Mac from across all but the largest living rooms, but you have to put up with swapping in new batteries from time to time. Keeping a couple of sets of rechargeable batteries on hand takes the sting out of these all-too-frequent swaps (every couple of days in my experience).

Another option is Belkin's MediaPilot (\$100; www.belkin.com), a rechargeable wireless keyboard with a built-in mouse



Farewell to Front Row?



Do you find Front Row's capabilities a little too limited? If so, one alternative is equinux's \$30 home-media interface, MediaCentral 2.0 (www.equinux.com). Like Front Row, MediaCentral takes over your Mac's screen, displays large commands that you can easily see from across the room, and lets you control your Mac with your Apple Remote.

On the main screen you'll find entries for IP TV, TV, Movies, DVD, Games, Music, Radio, Pictures, and more. Most of these entries are linked to either

streaming Web content or media files stored in your Mac's media libraries—your iTunes and iPhoto libraries, for example—or files that you've placed in the My MediaCentral Folder.

IP TV provides links to video from Google Video, YouTube, and a variety of outfits that stream video over the Web, including the BBC and the AmericaFree.TV archives. The regular TV option lets you watch digital television, using certain DVB-T hardware devices, which unfortunately don't work in the United States.

Within Movies, you can select movies (original files or aliases stored elsewhere) from MediaCentral's My Movies folder, movies within your iTunes library, or movie trailers hosted by equinux. The DVD entry lets you play a DVD movie or a DVD ripped as a Video_TS folder stored in the My DVDs folder.

The Music entry links to music files stored in

the My Music folder, your iTunes library, or mounted volumes that contain music files. And Pictures offers slide shows of images stored in MediaCentral's My Pictures folder or your iPhoto library, and from some Web-based photo streams.

In addition to its increased support and flexibility, MediaCentral also lets you resize its window—helpful not only in that it lets you do other things with your Mac while media are playing, but also because a lot of streaming video looks blocky at full-screen resolution anyway.

MediaCentral 2.0 does have several drawbacks, though. It lacks Front Row's ability to stream networked media over Bonjour. Playback stutters in some situations—for example, a movie that played perfectly well in iTunes hiccupped when I attempted to play it in MediaCentral; and the music in iPhoto slide shows occasionally paused from one slide to another. It can't deal with multichannel audio, so if you're connected to a surround-sound audio system, you won't get surround sound when playing DVDs. Also, many people have reported problems with the stability of the demo version of MediaCentral.

Despite its flaws, MediaCentral 2.0 is a step in the right direction. Even though your Mac—with a collection of applications and Web sites—can perform all the functions that MediaCentral can, having it all in a single, attractive package is a real convenience.



Total Control



The Mac mini includes Apple's simple Remote Control. But if you're looking for something that can do more, you do have other options.

Keyspan's \$40 **RF Remote for Front Row** (www.keyspan.com) is designed specifically for Front Row but offers two advantages over Apple's own model: it adds mute, eject, and sleep buttons; and it uses radio frequency (RF) technology instead of infrared, which means that it has a range of up to 60 feet and the ability to control playback through walls (or an AV cabinet).

If you're willing to venture outside Front Row, Griffin Technology's \$40 **AirClick USB** (www.griffintech.com) is a five-button, RF-based remote that comes preconfigured for many applications. And Keyspan's \$60 infrared **Express Remote**, though bulkier, is also much more capable, thanks to its 17 buttons and software that allows you to configure them for any application.

Owners of certain Bluetooth-capable mobile phones and PDAs should check out Jonas Salling's \$24 **Salling Clicker 3.0** (★★★★); "Soft-

ware Jackpot," August 2006), which supports more than 100 such devices.

This software lets you use that phone or PDA to control multimedia apps on your Mac via Bluetooth, pull up and control Front Row, and so much more. You can directly control Apple's iTunes, iPhoto, DVD Player, Keynote, and QuickTime Player; VideoLAN's VLC; EyeTV; Slim Devices' SlimServer; and Microsoft PowerPoint. You can even direct the Mac's cursor and clicking functions. And because the device uses Bluetooth, you don't need to be in the line of sight of the mini's IR port. Anywhere within about 30 feet of the Mac is golden.

If you want to reduce overall clutter, look to a universal remote such as those from Logitech. The **Harmony remotes** (\$130 to \$400; www.logitech.com) let you replicate the controls of just about any remote control. To train the typical universal remote, you fire your collection of devices at it, hoping that it will learn the appropriate commands. You configure the Harmony models online—a far more effective approach. Just travel to the Harmony Web site, choose the remotes you own from the exhaustive list of supported devices, and download a profile that matches your gaggle of gear. Plug a USB cable into your Harmony remote, and the Harmony software uploads that configuration into it.—CHRISTOPHER BREEN AND DAN FRANKS

(but note that the drivers are not yet Universal). It also incorporates an infrared remote control for AV devices (see "Total Control").

The Last Word

So how well does the Mac mini work as the centerpiece to your digital lifestyle? If you don't need the assistance of an IR blaster to change channels—you access

TV via an antenna or an unscrambled analog cable connection—a DVR running the EyeTV 2 software is an adequate, if limited, substitute for a TiVo DVR (and it comes without the latter's monthly service fees). And while I'd love to see Elgato provide its own IR blaster option for the millions of people who do get TV from a scrambled cable box or satellite receiver, it's comforting to know that you can cobble together the necessary parts and software—though doing so is a complicated job.

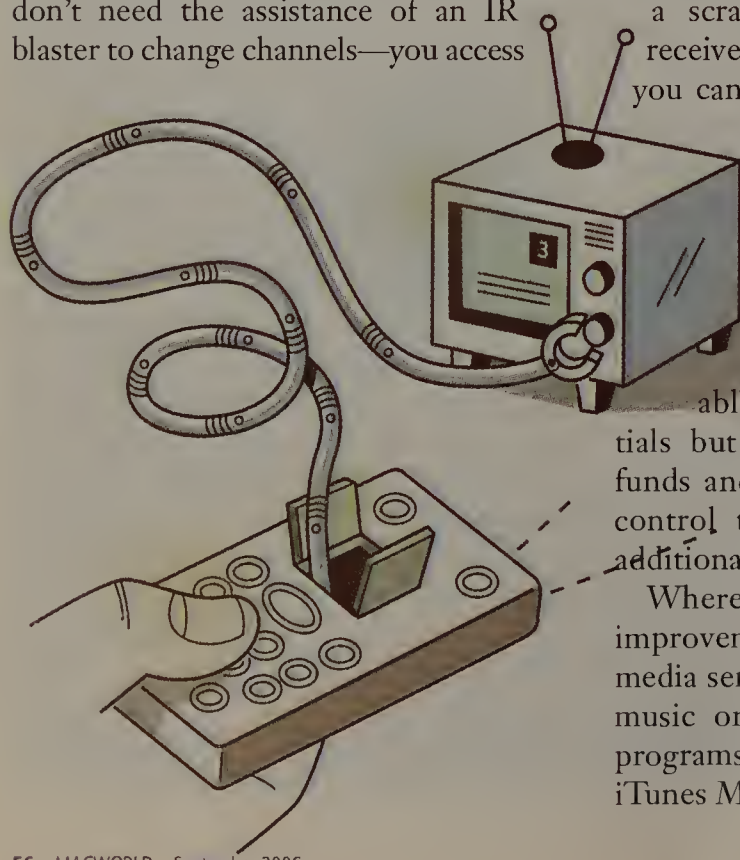
In the kind of complex configuration that puts the Mac in the middle of an existing media center, Apple's Remote and Front Row are barely passable options, providing the essentials but little more. Again, with the funds and the desire to do so, you can control the entire enterprise with an additional remote.

Where the mini needs fundamental improvement is as a client for a larger media server. If you traffic exclusively in music or short-to-medium-length TV programs and videos purchased from the iTunes Music Store, you'll get along fine

sharing that media over a solid wireless network. But when you're dealing with full-length movies, you may need to store them somewhere other than on the mini's hard drive. You can share full-length movies via Front Row, given correct movie encoding and a fast network connection; however, some people may find this option more trouble than it's worth.

The current state of the computer as a media center bears comparison to the state of portable digital-music-player technology just before the release of the iPod. Today, as then, the pieces exist to create much of the experience you desire, yet they remain scattered. You can assemble a multimedia center with a small computer at its core, but it takes time and money, and the result doesn't provide the convenience or quality of traditional AV gear. I'm putting my money on Apple as the company most likely to one day put those pieces together.

Senior Editor CHRISTOPHER BREEN is the author of *Secrets of the iPod and iTunes*, fifth edition, and *The iPod and iTunes Pocket Guide* (2005, Peachpit Press).





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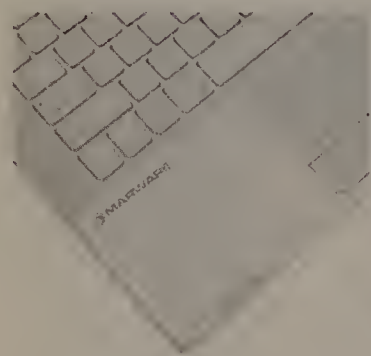
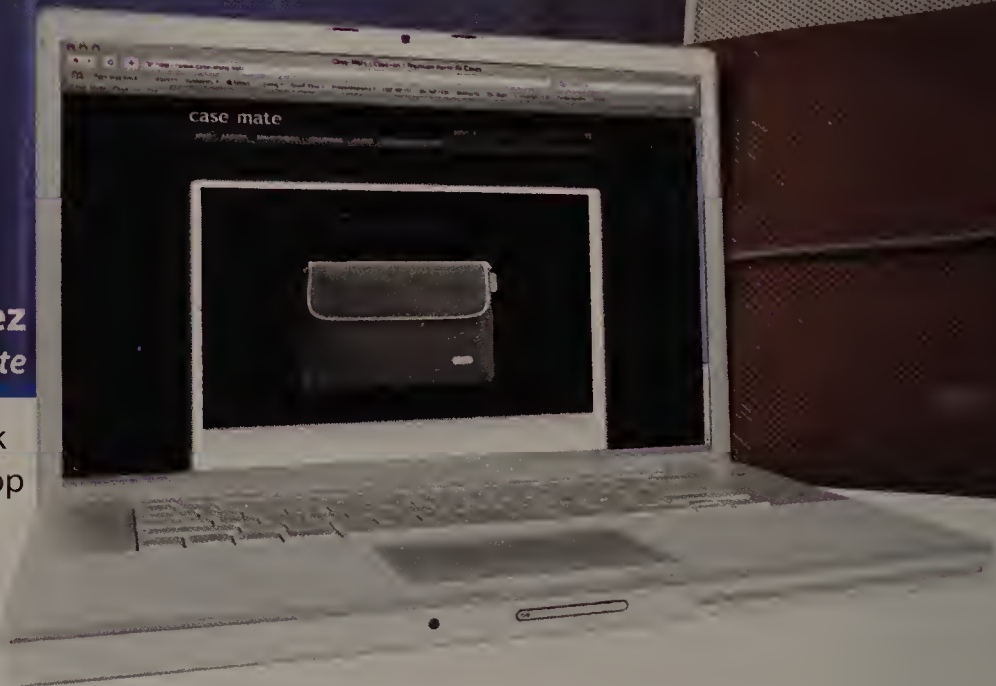
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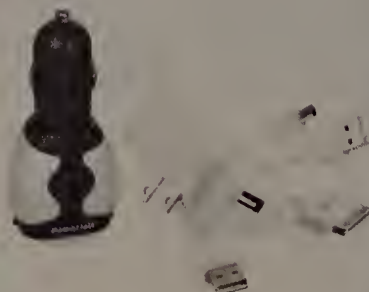
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from Griffin

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from Dr. Bott
Connect any 3 powered or unpowered USB devices to your laptop without a power supply.

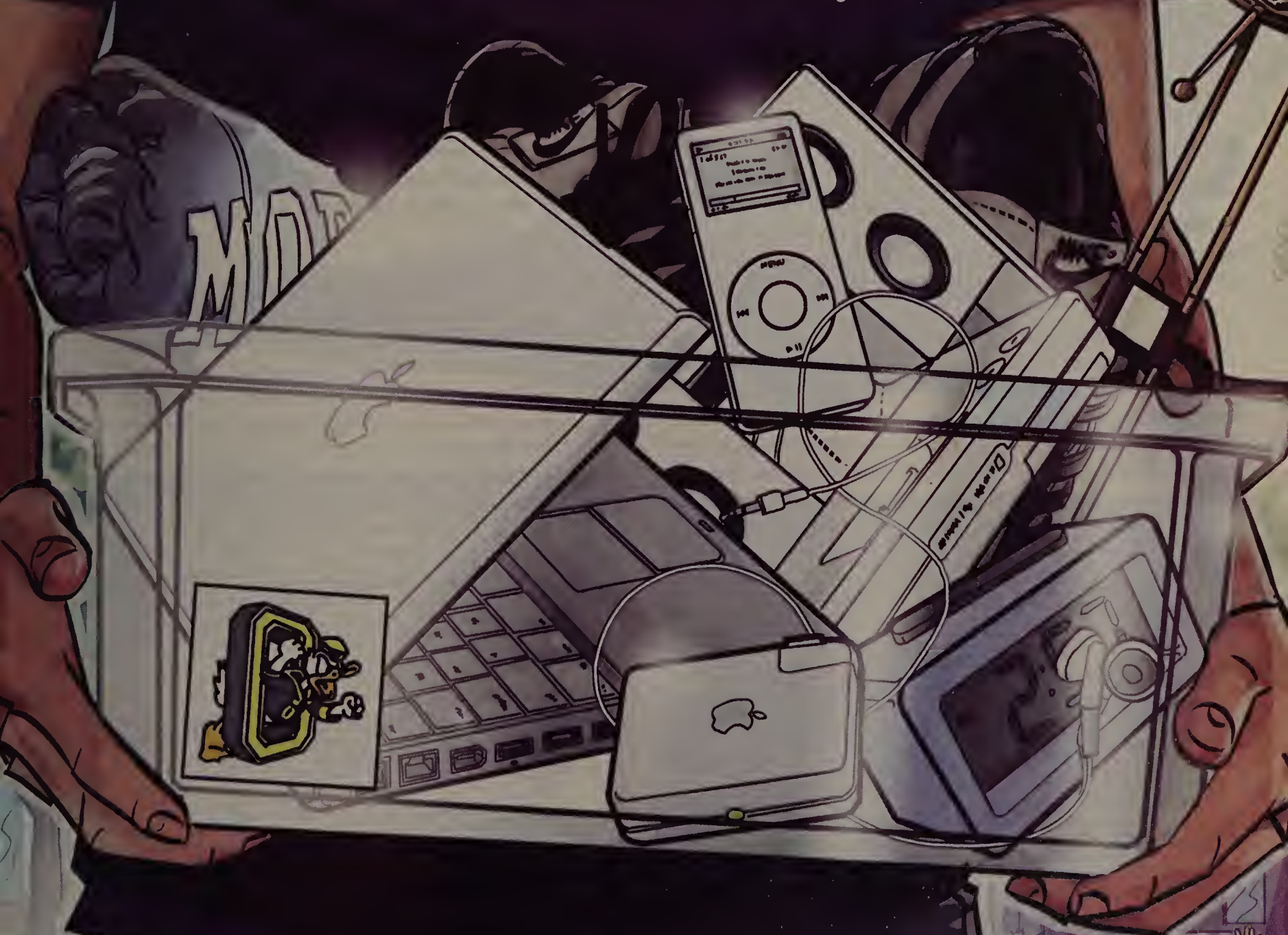
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Making the GRADE

Smart Mac
Gear for
College
Students

Illustration by Ben Shannon



As summer turns to fall, young folks all over the United States are heading back to college. For the students in your life, a Mac can be one of the smartest back-to-school tools they can pack—perfect for taking notes, performing research online, and writing papers. It's also a great all-in-one entertainment system.

But which Mac is right for your college scholar? In the pages that follow, we have some suggestions, as well as advice on how to outfit a dorm room with all the essentials—including monitors, printers, and speakers—while leaving enough money for textbooks. We'll also give you some care-package ideas that your coed is sure to appreciate in this digital era. After all, wouldn't your favorite college kid rather get an iTunes gift card than a box full of cookie crumbs?



Majoring in Mac

What's the Best Mac for a College Student?

In the past, the school determined a college student's computer options. If it demanded that its students use a Windows PC, a PC is what they got. That has changed now that Intel-based Macs can boot into either Mac OS or Windows XP (or, for that matter, Linux). The only thing left to figure out is which Mac makes the most sense for your student and your budget. How do the three less-expensive models compare as university-bound machines? Here's how we'd analyze the problem. (For more details, see our table on page 34.)—CHRISTOPHER BREEN

iMac

Pros: Fast; big display (on 20-inch model); roomy hard drives; elegant design; built-in iSight camera.

Cons: Not portable; not easily upgradable.

The iMac is available in two configurations; a 1.83GHz Intel Core Duo with a 17-inch display, for \$1,299, and a 2GHz Intel Core Duo with a 20-inch display, for \$1,699 (both **★★★★**). The iMac has a few obvious advantages over the Mac mini, namely a keyboard, mouse, and built-in monitor, as well as a faster graphics chip set and more-expansive hard drives (160GB and 250GB). The iMac outperforms the mini in all our performance tests; gamers will especially appreciate the iMac's high frame rates in 3-D shooters. And if you're burning movies and media, both iMac models come with a SuperDrive for creating DVDs (macworld.com/1211). At press time, Apple introduced an \$899 iMac for the education market (see Macworld.com for details).



Mac Mini

Pros: Inexpensive; compact; Front Row software; Apple Remote.

Cons: Limited hard-drive space; not a great gaming machine.

Apple's least-expensive Macs—the \$599 1.5GHz Intel Core Solo Mac mini and the \$799 1.66GHz Intel Core Duo mini (both **★★★★**)—are good if you already own a USB keyboard, USB mouse, and monitor, and if your work is simple (writing papers, surfing the Web, and sending e-mail). With Universal programs (such as the iLife and iWork apps), the mini is surprisingly fast. While Microsoft Office apps run under Apple's Rosetta translation technology, more processor-intensive, non-native apps such as Adobe Photoshop don't. Because of its relatively small hard drive (60GB or 80GB standard, 100GB or 120GB optional), the mini isn't optimal for storing video, and its graphics card is too poky for intense games (macworld.com/1501).



Student Discounts

If you can prove that you're a student, you can take advantage of great deals for your Mac. But caution: These discounts end soon.

Buy a Mac, Get an iPod Apple is currently offering a free iPod nano (via a mail-in rebate) when you buy a new MacBook, MacBook Pro, iMac, or Power Mac G5. The offer ends September 16 (macworld.com/1502).

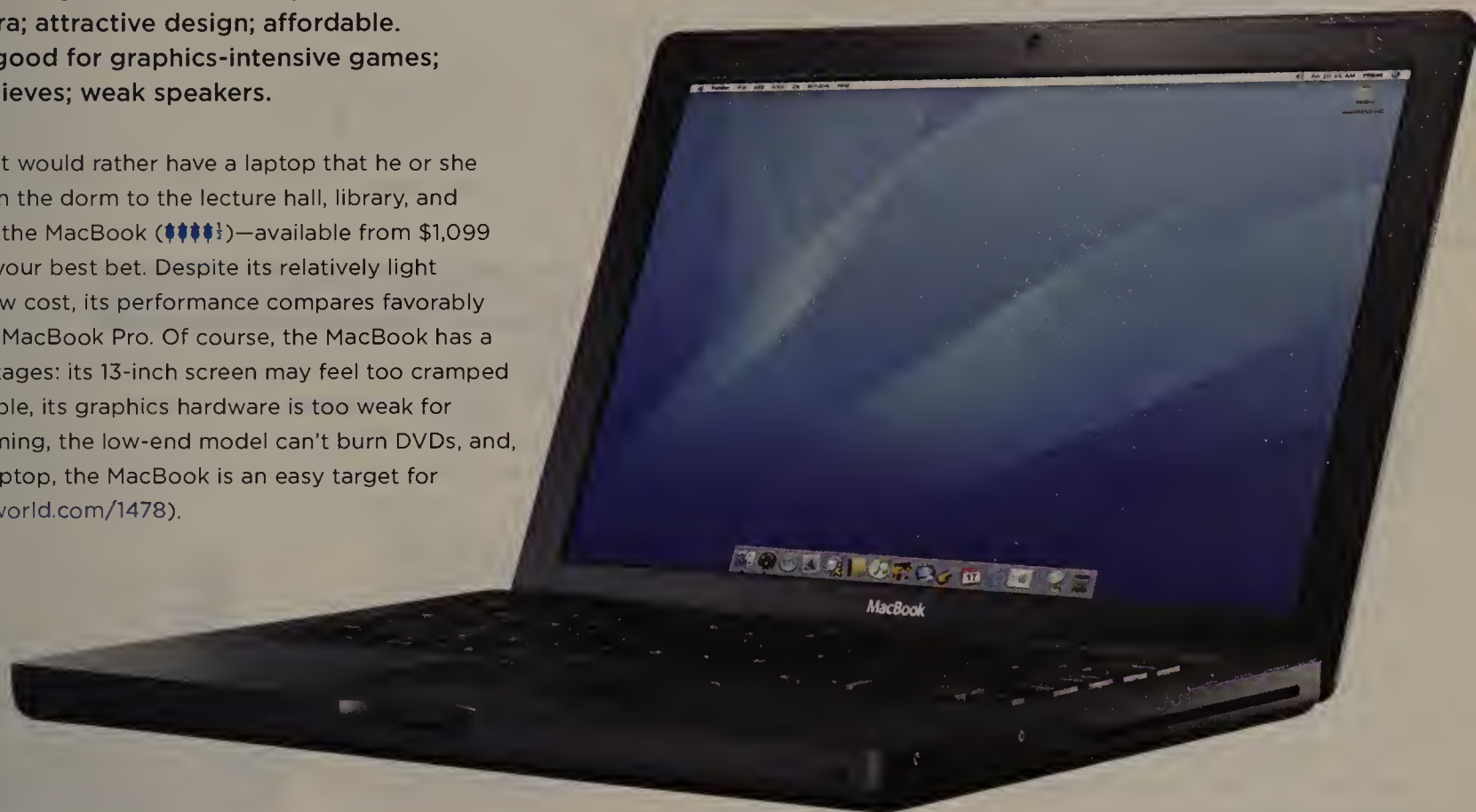
Office Hours Trying to get you hooked early, Microsoft is offering a \$50 rebate on its Office 2004 Teacher and Student Edition (regularly available for \$150). The offer ends September 12 (macworld.com/1503).

MacBook

Pros: Fast enough for most tasks; portable; built-in iSight camera; attractive design; affordable.

Cons: Not good for graphics-intensive games; target for thieves; weak speakers.

If your student would rather have a laptop that he or she can carry from the dorm to the lecture hall, library, and Internet café, the MacBook (●●●●●)—available from \$1,099 to \$1,499—is your best bet. Despite its relatively light weight and low cost, its performance compares favorably to that of the MacBook Pro. Of course, the MacBook has a few disadvantages: its 13-inch screen may feel too cramped for some people, its graphics hardware is too weak for hard-core gaming, the low-end model can't burn DVDs, and, as with any laptop, the MacBook is an easy target for thieves (macworld.com/1478).



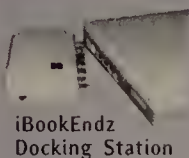
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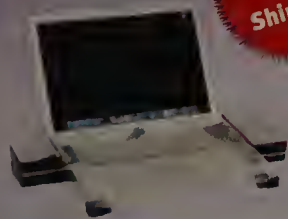
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Papers, Please

Our Favorite Budget Printers

No matter what you do in college (academically, at least), you need a printer. But what kind of printer do you need? Are you working with lots of graphics? Sharing a printer with roommates? Here are four affordable options that cover a variety of printing needs.—JAMES GALBRAITH

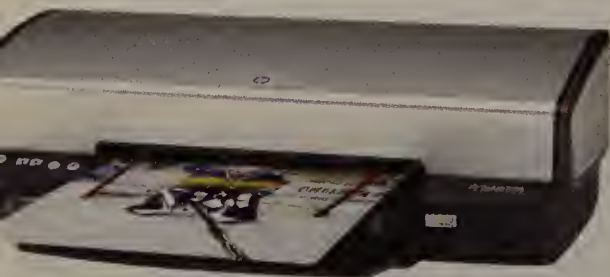
Hewlett-Packard Deskjet 5940

Pros: Excellent text quality; convertible to a six-color photo printer; PictBridge USB port.

Cons: Slow in PDF test.

General-purpose ink-jets don't get a lot of respect. Laser printers can print sharper text more quickly, and photo printers can produce smoother, more-pleasing pictures. But Hewlett-Packard's \$120 Deskjet 5940 (●●●●) prints cleaner text more economically than a

photo printer, produces better photographs than a color laser printer, and costs a lot less than either (macworld.com/1012).



Lexmark C522n

Pros: Fast print speeds; Bonjour-capable; PostScript 3 emulation.

Cons: Noisy printing.

If you need color output, Lexmark's (comparatively) inexpensive color laser printer, the \$500 C522n (●●●●), has quick print speeds, Bonjour support (for easy network connections), and high-end features like built-in Ethernet

and PostScript 3 emulation. Though it may be a bit loud for tight workspaces (like your average college dorm room), the C522n can take care of everything from straight text to elaborate graphics (macworld.com/1045).



Canon Pixma iP4200

Pros: Built-in duplex printing; individual ink cartridges; inexpensive; great-looking photos; 100-year print life.

Cons: Sluggish printing at high resolutions.

The \$130 Pixma iP4200

(●●●●) is a great all-

around ink-jet printer.

It can print on both

sides of the page, and

it excels in printing

both Microsoft Office

documents on plain paper

and high-quality, long-lasting

photos on Canon's photo papers. The

only downside is that it's a little poky in printing high-resolution

images. But for general-purpose printing, the Pixma iP4200 is a

great, affordable choice (macworld.com/0837).



Xerox Phaser 6120N

Pros: Excellent photo quality; networkable; PostScript 3 support.

Cons: Not Bonjour-capable.

If you want a printer to share with

the neighbors in your

dorm, you could all

chip in for a \$500

Xerox Phaser 6120N

(●●●●). It produces

excellent photographic

images, is networkable

(so everyone can use it

at the same time), and

supports PostScript 3.

While the Phaser 6120N

is no speed demon, it's

plenty fast for a small suite

of users. The hard part will

be figuring out who gets to

keep it at the end of the year

(macworld.com/1047).



Care Packages 2.0

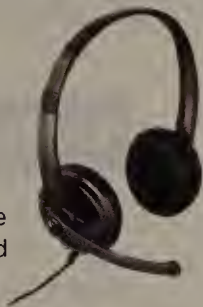
Back in the day, homesick college kids could look forward to care packages full of cookies, cakes, and other tokens of home, to assuage their loneliness. These days, they expect a bit more than dried-out snacks. Check out the following low-priced gift ideas that today's generation of collegians will really appreciate.—CYRUS FARIVAR

Flickr Pro Account **flickr**™

Sure, you can set your daughter up with a Flickr account for free. But for \$25, you can get her 2GB of uploads a month, unlimited storage, and an ad-free browsing experience (flickr.com).

Logitech Premium USB Headset 350

With nice soft ear pads, USB connectors, a noise-canceling microphone, and a \$45 price tag, this headset is just what your college kid needs for those cheap Skype calls home (www.logitech.com).



Laptop Hoods

Want to study outside? Today's laptop screens don't stand a chance against the sunshine—at least not without the shade of one of these \$35 laptop hoods (www.hoodmanusa.com).



iTunes Gift Card

Can't keep up with what kind of wacky stuff Junior's listening to these days? No worries. Pop a \$15, \$25, \$30, or \$50 card in the mail, and let him figure it out (itunes.com).



SkypeIn Account

The SkypeIn account comes with a regular phone number, so anyone—not just your fellow Skype converts—can call you, no matter where you are (skype.com/products/skypein/).

Griffin iTalk

So your student can record lectures for later, get the Griffin iTalk—a \$40 microphone that plugs into and records directly to an iPod (sorry, a remote port is required) (macworld.com/2146).



Laptop Insurance

A portable Mac is perfect for toting around campus, from the dorm to the lecture hall and library. Perfect, that is, until it goes missing. Safeware will give you a margin of safety by insuring your laptop against theft and accidents (www.safeware.com).

LAPTOP HOOD PHOTOGRAPH BY PETER BELANGER

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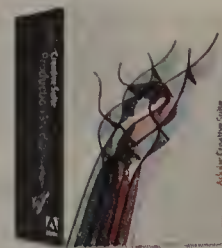
Adobe Dreamweaver 8 **\$199⁹⁸**
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SRP \$549



Adobe Flash Pro 8 **\$249⁰⁰**
SRP \$699



Adobe Production Studio Premium **CLICK FOR PRICING**
SRP \$1649



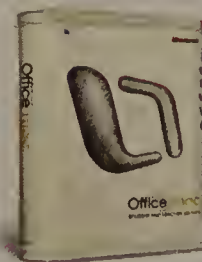
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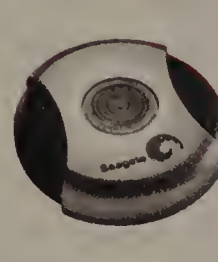
FileMaker Pro 8.5 **\$149⁹⁸**
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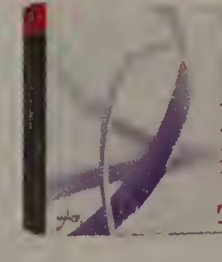
Avid Xpress PRO HD **\$295⁰⁰**
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Music Majors

Five Ways to Rock the Dorm

For most undergraduates, music is as much a part of student life as libraries, pizza, and beer. Macs and iPods make storing music easy, but what about listening to music? Whether you prefer sharing your tunes at very high volumes with everyone else or quietly listening to them as you walk across campus, we've got five ways for you to hear what you're playing.—DAN FRAKES



AKG K26P

AKG's \$50 K26P headphones give you two things that are tough to find in small, lightweight headphones: a closed design and killer bass. Their small leather earpieces block a good amount of external sound (also known as roommates), and their bass response will leave you wondering if there's a subwoofer hidden somewhere in the room. Best of all, they fold up to fit inside an included travel pouch—perfect for road trips and in-class listening (macworld.com/2103).—DF

iLuv i177

There are several iPod-compatible alarm clocks available. The \$110 iLuv i177 (★★★★) is one of the few that doesn't skimp on the clock part. It has two alarm settings (so you can set it to go off at different times). You can set



each alarm to wake you to any audio output. And the alarm volume can be set independently of the master volume, so you won't be blasted out of bed, unless you want to be (macworld.com/1504).—MATHEW HONAN

Zvox Mini

Want an iPod boom box that's better than Apple's own iPod Hi-Fi? Zvox Audio's \$200 Zvox mini offers superior sound. True, it doesn't have the Hi-Fi's room-shaking bass, but many listeners will be fine with that trade-off. And if you want to take the Zvox mini outside, you can get a big rechargeable battery and a padded case for an additional \$100 (www.zvoxaudio.com).—DF

V-Moda Remix M-Class

Want to stand out from the horde? Exchange the iPod's ubiquitous white earbuds for V-Moda's \$50 Remix M-Class earbuds (★★★★). They're available in metallic blue, metallic pink, and silver.



And they sound better. They're among the best earbuds I've tested (macworld.com/1273).—DF



Audioengine 5

If you're looking for powered speakers that'll handle your Mac, your iPod, and even your old hi-fi hardware—and if you have some money saved—the \$350 Audioengine 5 (★★★★) is the answer. These speakers provide solid, balanced sound—better than Apple's own iPod Hi-Fi—from many devices. Thanks to the AC adapter in the back, you can plug an AirPort Express directly into the Audioengine 5 and stream iTunes from your Mac (macworld.com/1505).—CHRISTOPHER BREEN



Visual Studies

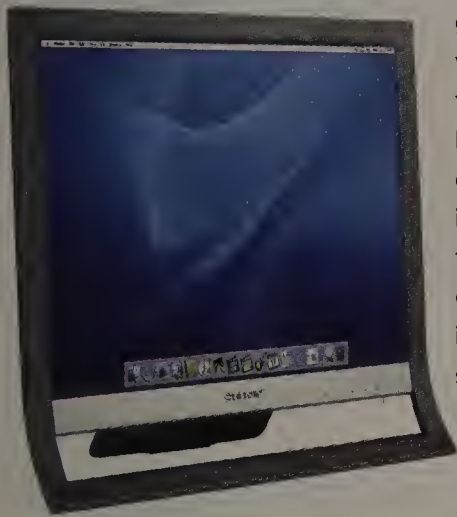
Best Bets in Low-End Monitors

If you opt for the Mac mini but don't have a spare monitor at home, you'll need to buy a display. Fortunately, you can get a perfectly decent display—one that you can also use to watch TV and movies—at a reasonable price. Here are some of our favorite affordable monitors.—JAMES GALBRAITH

Sony SDM-HS75P

Pros: Eye-catching, compact design.
Cons: Few bells and whistles.

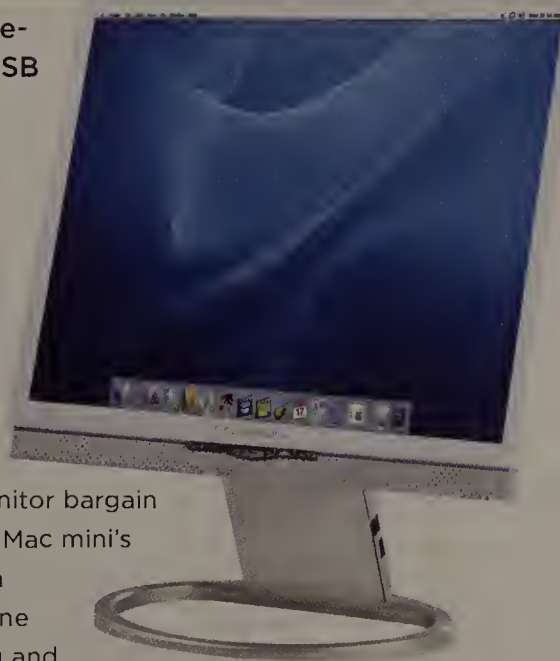
Although the Sony SDM-HS75P (★★★★) is short on bells and whistles—no built-in USB port, speakers, or ability to pivot—it's a good choice for students who want a nicely designed display that performs well but who have limited desk space. While we originally dinged the monitor for its high price (\$450), it's available for much less than that now (\$200). Now that this 17-inch LCD is affordable, it's worth your consideration (macworld.com/0637).



Envision EN7450

Pros: Inexpensive; integrated speakers and USB hub; complements the Mac mini.
Cons: Color shifts when viewing the screen from an angle; no height adjustment; can't swivel or pivot; small text appears fuzzy.

If you're looking for a monitor bargain that will complement the Mac mini's design, the \$280 Envision EN7450 LCD (★★★★) is a fine choice. It has both analog and digital inputs, and its silver base and white bezel make it an attractive companion for the Mac mini. But be warned: Because of its relatively narrow viewing angle and tinny speakers, the EN7450 isn't the screen your roommates will want to gather around to watch a movie (macworld.com/1258).



NEC MultiSync LCD1970VX

Pros: Height-adjustable stand; analog and digital inputs; can pivot to portrait mode.
Cons: Limited viewing angle.

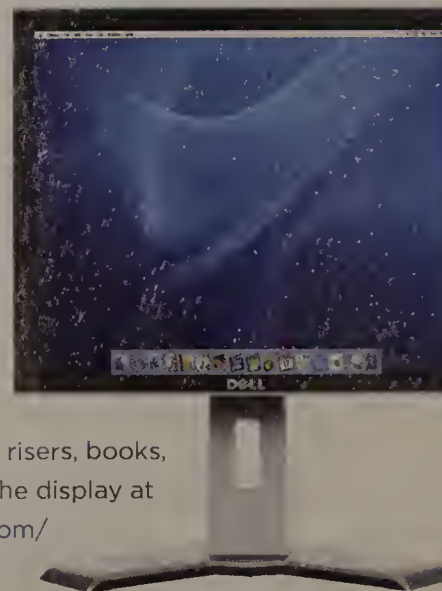
If you're willing to spend a little more money to get a big screen, the NEC MultiSync LCD1970VX (★★★★) is reasonably priced—at \$440—for a 19-inch LCD. It has nice touches, such as analog and digital inputs, and the ability to pivot and adjust its height. Sure, you can find displays with better viewing angles and cleaner text, but if saving money is important to you, check it out (macworld.com/1046).



Dell UltraSharp 1707FP Flat Panel LCD

Pros: Inexpensive; adjustable design; adjustable height; good text quality; accurate color out of the box; includes DVI and analog cables; 4-port USB hub.
Cons: Limited viewing angle.

Budget-conscious display shoppers won't be disappointed with the \$280 Dell UltraSharp 1707FP Flat Panel LCD monitor (★★★★). It's a 17-inch display that has many thoughtful features. My favorite of these is its impressive range of motion: it pivots, tilts, and swivels, and its height is adjustable—no need to stack risers, books, or boxes underneath to get the display at the right height (macworld.com/1259).



Outwit PDF Annoyances

From downloadable tax forms to your company's online medical forms, Adobe's Portable Document Format (PDF) files are everywhere. And that's no surprise: PDFs preserve a document's look, *and* you can open them on any computer. But PDF files—and the applications and utilities that generate and read them—can be confusing. I'll shed light on some commonly confounding PDF issues.

Control PDFs in Safari

As of Mac OS X 10.4 (Tiger), when you access a Web-based PDF file, it opens in Safari's browser window rather than downloading to your desktop or opening in Preview. But how do you navigate through these documents?

Control-clicking on the displayed PDF reveals there's more here than meets the eye. From the contextual menu you can open the PDF in your Mac's default PDF reader (Preview), zoom in and out, view the PDF as a single page or as facing pages, and jump to the next or previous page (see "Going on Safari").

Add Options with Reader If you want greater control over the PDF files displayed in your browser window, you may wish to install Adobe's free Acrobat Reader (macworld.com/1372). It includes AdobePDFViewer.plugin, an Internet plug-in that lets Safari users view PDF files with Adobe's more feature-rich PDF viewer. This viewer adds a toolbar to Safari that not only pro-

vides zoom controls that don't require the control key, but also lets you search a document—a real boon when you're looking for a specific piece of information.

If the plug-in doesn't seem to work, quit Safari and Acrobat Reader, navigate to /Library/Internet Plug-Ins, and remove AdobePDFViewer.plugin. Launch Acrobat Reader 7 and choose Help: Detect And Repair. In the Select Components And Repair dialog box that appears, you'll see a checked Adobe PDFViewer option. Click on the Continue button and Acrobat Reader will install a fresh copy. Adobe Acrobat 7.0 Standard and Professional (\$299 and \$449, respectively; www.adobe.com) also include this Detect And Repair function.

Get Your PDFs Out of Safari

Not everyone prefers to view PDFs in a browser. To force Safari to revert to its old behavior—namely, downloading a PDF rather than displaying it—launch Terminal (/Applications/Utilities) and enter this command:

```
defaults write com.apple.Safari
WebKitOmitPDFSupport -bool YES
```

From now on (or at least until you enter the same command ending with NO rather than YES), Safari will download PDF files.

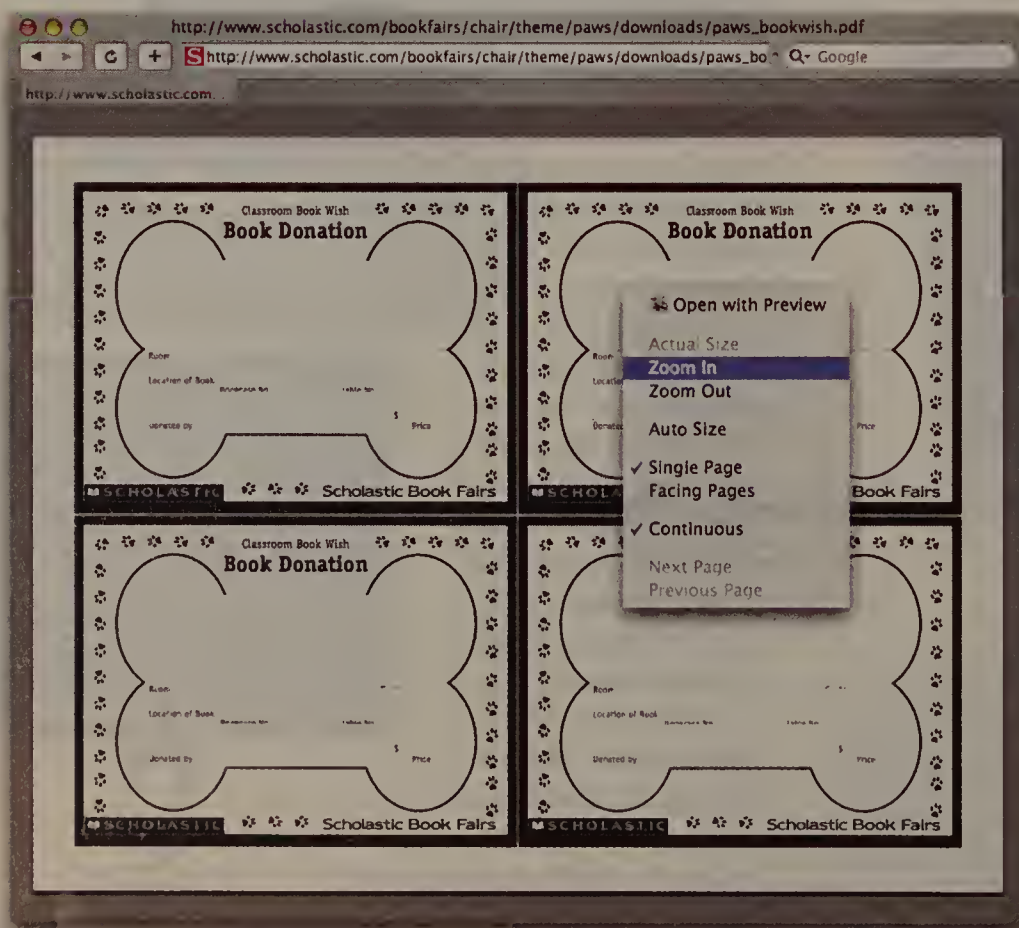
View PDFs with Firefox

Mozilla's Firefox (free; www.mozilla.com) Web browser doesn't offer PDF viewing in the browser window by default. When you click on a PDF browser link, Firefox pops up a dialog box that offers you the option to open the file with your Mac's default PDF viewer or save the file.

AdobePDFViewer.plugin isn't compatible with Firefox, but if you're using a PowerPC-based Mac, you have other options. Shubert!it provides the first option, the free PDF Browser Plugin (ⓂⓂⓂⓂ; macworld.com/1373). With this plug-in installed in your Internet Plug-Ins folder, you have the same inline PDF viewing options that Safari offers (although they're available in a toolbar rather than a contextual menu), plus the ability to rotate pages and view facing pages.

Going on Safari

Convinced that there *must* be an easy way to zoom in on PDF files that display in Safari? Trust your instincts and control-click on the page—the tools you need are in this contextual menu.



As this article went to press, PDF Browser Plugin wasn't compatible with Intel Macs. If you want to view a PDF inside Firefox on an Intel Mac, turn to Denis Remondini's free PDF Download extension (macworld.com/1441). It can display a PDF file as HTML within a browser window, but offers no special navigation or viewing features.

Banish PDFMaker from Office

Tired of seeing the PDFMaker toolbar *slowly* appear whenever you open a Microsoft Word, Excel, or PowerPoint document? No matter how many times you click on its close button, it seems impossible to make this option (brought to you by Adobe Acrobat Standard and Professional) go away for good.

To rid your Office applications of these toolbars, travel to /Applications/Microsoft Office *version number*/Office/Startup. Open the Excel, PowerPoint, and Word folders and remove the PDFMaker.xla, PDFMaker.ppa, and PDFMaker.dot files, respectively. When you next start an Office application, the toolbar will be gone. But keep an eye out for a Repair Setup window indicating that the PDFMaker component (which is responsible for these Office annoyances) needs repair. *Deselect* this option in the Repair Setup window to prevent Acrobat from reinstalling the toolbars.

Rev Up Reader

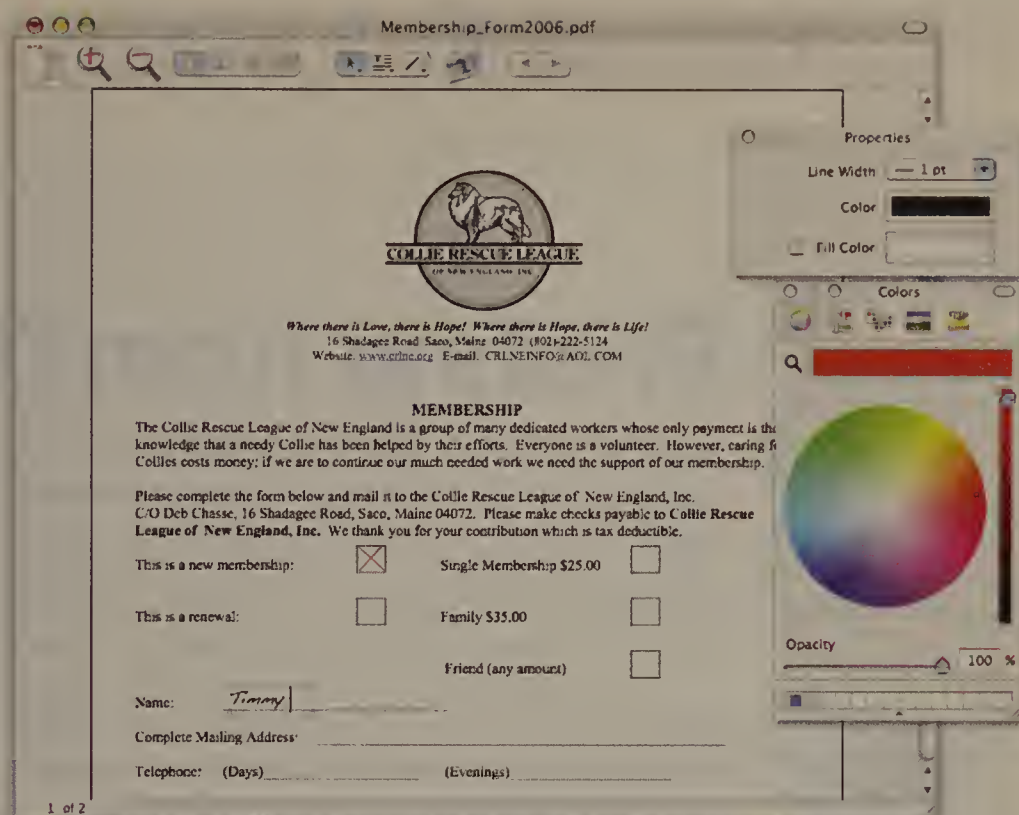
Adobe Acrobat and Acrobat Reader can be very poky at launch. To perk them up, select the version of Acrobat you use, press ⌘-I to bring up the Info window, click on the triangle next to the Plug-ins entry, and disable every plug-in except WebLink.acroplugin, ImageViewer.acroplugin, EScrip.acroplugin, and Search.acroplugin. You need these to open links, view slide shows, and search your PDF files, but everything else can go. For more speedup techniques, see macworld.com/1374.

Edit Your PDFs

PDF files appear to be read-only documents, but unless the author protected it, you *can* select a PDF's text, annotate it, and in some cases, edit it.

Select Text Selecting text in Preview or Acrobat works much as it does in any text editor. Choose the Text tool and drag it over the columns of text you want. This can be tricky if you're working in Preview and your document contains columns. Hold down the option key to create a selection tool and drag that tool over the columns of text you want.

Add Notes Unlike Acrobat Reader, the version of Preview bundled with OS X 10.4 allows you to add annotations to unprotected PDF files. You can add both yellow sticky notes that contain text and red oval annotations for calling out items on the page. These annotations are embedded in the file and can't be edited after you've saved it (and once saved with the file, they'll appear in a printed copy).



Add Text Acrobat Standard and Professional let you add text to a PDF with the TouchUp Text tool (choose Tools: Advanced Editing: TouchUp Text Tool). To add text to a file, select this tool, option-click where you'd like to insert your text, choose a font from the New Text Font window that appears, click on OK to dismiss this window, and start typing.

To alter the text's font, size, and fill color, select and control-click on it; from the contextual menu that appears, choose Properties. In the TouchUp Properties window, click on the Text tab and change the settings to your liking. To adjust the position of your text, choose Tools: Advanced Editing: TouchUp Object Tool. (If you don't see these TouchUp tools, you've disabled plug-ins to speed up Acrobat's performance. Enable the plug-ins to use the tools.)

Sign Your PDFs

Need to sign a PDF document but don't want to bother with printing it out? Acrobat Standard and Professional provide a roundabout way to append a scanned image of your signature to a PDF file.

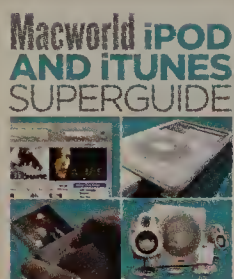
Choose Tools: Commenting: Stamps: Create Custom Stamp. Click on the Browse button in the resulting Select Image For Custom Stamp dialog box. Navigate to the image you want to append and click on Select, and then on OK. In the Create Custom Stamp dialog box, type a category name for that image—Signature, for example—then name the stamp and click on OK. When you're ready to slap your Joan or John Hancock on a document, choose Tools: Commenting: Stamps (or Stamp Tool in Acrobat 6) and select your stamp from the hierarchical menu.

If you don't have Acrobat Standard or Professional, you're not out of luck. Use SmileOnMyMac's \$50 PDF Pen (🖋️; www.macworld.com/1375) to sign PDFs and create new PDF forms (see "Signing Off").

Signing Off Even if you don't have Acrobat Standard or Professional, you can still fill in PDF forms—or even add an image of your signature—using SmileOnMyMac's handy tool PDFPen.

Printing from iTunes

If you're busy grooving to your favorite tunes, you may not have realized that iTunes has some powerful printing features in addition to its music-playing abilities. You can print custom inserts for CDs you've burned from your playlists, create lists of your songs and albums to show friends, and even print a list of a backup DVD's contents.



Want more tips on digital music?

Pick up a copy of the *Macworld iPod and iTunes Superguide*, an 88-page book available in print (\$24.99 [shipping included]) or as a downloadable PDF (\$9.95). Order yours at macworld.com/1371.

View Them All A CD jewel-case insert with a mosaic cover shows album art in color for all the songs in your playlist.

Plus, you can save any of these documents as PDF files that you can send to other people—for instance, as a hint about the kind of music you like (and what you already own) before your birthday or another gift-giving occasion comes up.

Jewel-Case Inserts

iTunes lets you print several types of documents, but you'll probably find that jewel-case inserts are the most useful. They're perfect when you burn an album purchased from the iTunes Music Store or when you create a custom CD for that special someone.

There are three kinds of inserts: text-only lists of songs, single-album covers, and mosaics. To get started, create a playlist for your CD and select it (for an album, you can navigate to it, using iTunes' Browse mode. Click on the Browse button in the upper right corner of the iTunes interface or press ⌘-B). Then select File: Print, and you'll find many options in the Theme drop-down menu.

Single Album If you're burning an album and want to put its cover art on your insert, select Single Cover from the Theme menu (in addition to using the preceding methods, you can also choose what to print by selecting your entire library and using iTunes' search box to isolate that album's tracks). This theme puts that album's cover art on the insert's cover and then prints the track list over a faded version of the cover (for the inside of the CD case). While this insert won't look as nice as the inserts that

come with CDs purchased in a music store, it will add pizzazz to your jewel case.

Mosaic If you're burning a compilation—a playlist of songs from multiple albums—then you might choose the Mosaic theme for your jewel-case insert. iTunes will scale your album art to fit as many covers as possible on the front of the insert (see "View Them All"). It also prints a faded version of the mosaic for the track-list background on the interior side of the insert.

Although you can't choose which album art goes where in the mosaic, you can adjust the number of tracks in your playlist to alter the look of the insert. If you prefer to just use one big cover, you can choose the Single Cover theme; iTunes will pick the cover of the selected song in your library or playlist.

Song and Album Lists

iTunes offers other options for printing song and album information. The Song Listing option lets you print a list of the selected tracks, using one of several themes. You can print song names and lengths, artists, and albums; you can add your ratings, last-played dates, and play counts; or you can choose the Custom theme, which includes all the visible columns in your playlist or library. The Album Listing option lets you print a list of songs by album or a list of all your albums and artists.

Albums While their purpose may not be as obvious, there are good reasons to print song and album lists. For example, you can print a list of all the albums in your library, take the list with you when you go shopping, and see whether you're missing something by a particular artist.

To print song and album lists, select your library in the iTunes Source list (if you're in Browse mode, make sure that you have all your genres, artists, and albums selected in the browse columns). Now select File: Print, select Album Listing, and choose a theme. You can choose Songs By Album, which prints a list of

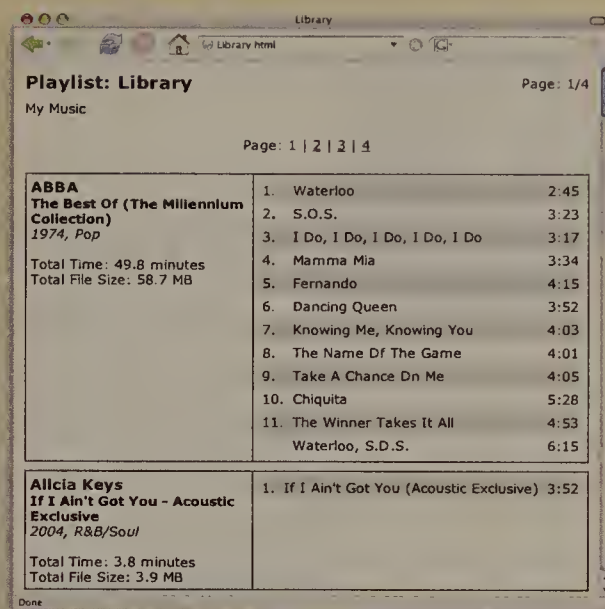


When iTunes Isn't Enough

If you want to print a snazzy disc label to go with a CD insert, iTunes won't help you. You'll need to turn to an application such as SmileOnMyMac's \$30 **DiscLabel 3.0** (www.smileonmymac.com), an easy-to-use program that helps you lay out both labels and CD inserts, import graphics, and tweak fonts for unique results. You can use the program's built-in templates or design your own, and DiscLabel lets you add custom text to your CD inserts—something that iTunes doesn't allow.

And what if you don't want to print a list of your library's contents but still want a way to share them? Try Trance Software's free **iTunes Publisher 4.1** (www.trancesoftware.com), which lets you create Web pages with the contents of your favorite playlists, or even text files that you can import into a spreadsheet to organize your collection (you can also do this by control- or right-clicking on a playlist in iTunes and selecting Export Song List). iTunes Publisher gives you full control over which columns are included, you can create HTML pages by song or by album, and you can remove duplicates or add your own playlist notes (see "Web List").

Finally, here's a trick that's perfect for karaoke parties: print your own karaoke song lists with lyrics. You probably know that you can add lyrics to any track in your iTunes library (select a track, press ⌘-L, click on the Lyrics tab, and paste the words). AppleScript maven Doug Adams has created the free **Make PDF Booklet script** (macworld.com/1460), which lets you create a PDF booklet containing tag info from the selected tracks (or every track from the selected playlist), including lyrics, and then add the PDF to your iTunes library. You can print out the PDF, complete with lyrics, and pass it around at your next party—so there's no excuse for people not to sing.



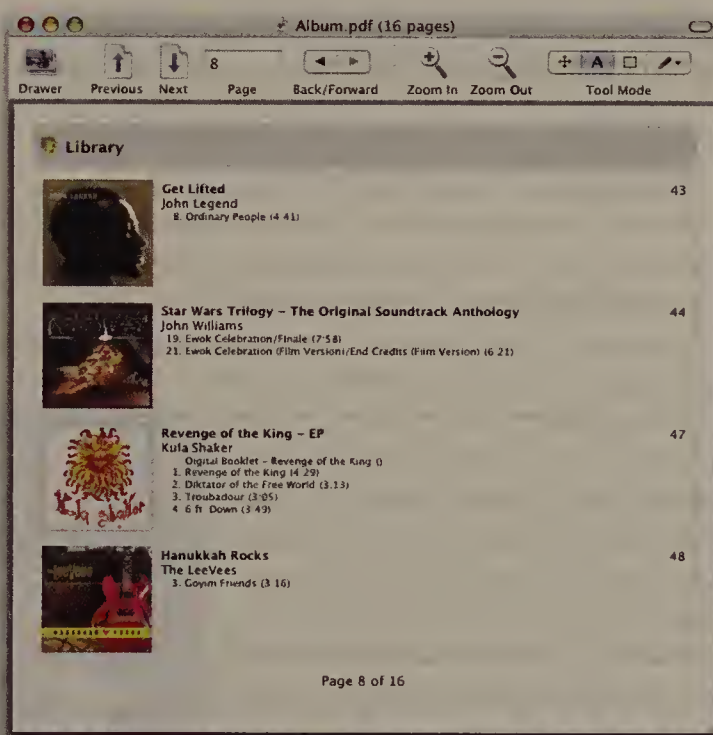
Web List Publish a partial or complete list of your iTunes library's contents on the Web with iTunes Publisher.

songs organized by album (see "List This"), or List Of Albums, which prints just the names of albums and artists, along with the number of songs and total time for each album (as with the other printing options, you'll see a preview to the right of the selection area). Be careful when you print one of these lists: they can be long if you have a large library, especially the Songs By Album list, which includes album art.

You can also print lists of selected items, such as all the albums by a certain artist (select that artist in the search box or in Browse mode) or in a certain genre, or the contents of playlists or smart playlists.

Songs Lists of songs are useful mostly for the control you have over what gets printed. As with album lists, you can print a song list of anything: a playlist, all the music by an artist, or the contents of a specific album. But with song lists, you can choose to print your ratings, the last-played dates, or the columns you have displayed in iTunes (which you can change by selecting Edit: View Options or by pressing ⌘-J). If you're a DJ working from one or two iPods, for example, you might want to have a list of your songs in order of beats per minute (bpm). Engage the Print command, select Song Listing, and then choose Custom from the Theme drop-down menu (which uses the current display for the printout). You can check the results in the preview section of the Print dialog box. Print this file, and you can scan your music library at any time for songs that have a specific bpm. Song Listing printouts are also useful if you're burning backup data DVDs of all your music and want to know which files are on which discs.

You can even print song and album lists from your iTunes Music Store Purchased playlist, to keep track of everything you've spent your hard-earned bucks on. Here's another cool trick: If you click on iTunes' Store preference pane and select the Buy Using A Shopping Cart option, you can add songs and albums to your



List This A list of your albums or songs can help you keep track of your collection when you're away from your Mac.

shopping cart and then select them and print them as if they were a playlist. This is ideal for letting people know what you're in the mood for the next time they want to give you the gift of music.

PDFs As with other OS X Print dialog boxes, you can also choose to "print" any of these lists to PDF files that you can view on any computer or send to friends. To create a PDF list, set up your list the way you want it, click on the Print button, and instead of choosing Print in the resulting window, click on the PDF button and select Save As PDF (the process varies slightly in versions of OS X older than 10.4). Now you've got a digital version of your list (or insert) that you can send across the Internet. □

KIRK MCELHEARN is the author of several books on the Mac and the iPod, including *iPod and iTunes Garage* (Prentice Hall, 2004). His blog, Kirkville (www.mcelhearn.com), features articles about OS X, the iPod, iTunes, and more.

Camera Phone Tips

The best camera in the world is the one that's in your hand when you need to take a photo. While few of us take our digital cameras everywhere we go, many of us do carry around cell phones with built-in cameras. True, you're probably not going to make high-quality 8-by-10-inch prints from your phone's snapshots. But these devices can do amazing things—if you know how to make the most of them.

Improve Your Technique

One of the reasons people shy away from using camera phones to take photos is that they often produce lousy pictures. You can improve your odds of getting a good shot by following these pointers:

Get Closer The camera phone is not designed for shooting landscapes. Move up close when you're composing your shots. Your images will have much more impact.

Pay Attention to Lighting Most camera phones perform best in moderately bright environments, such as overcast days. Getting attractive shots in low-light situations involves a bit more work.

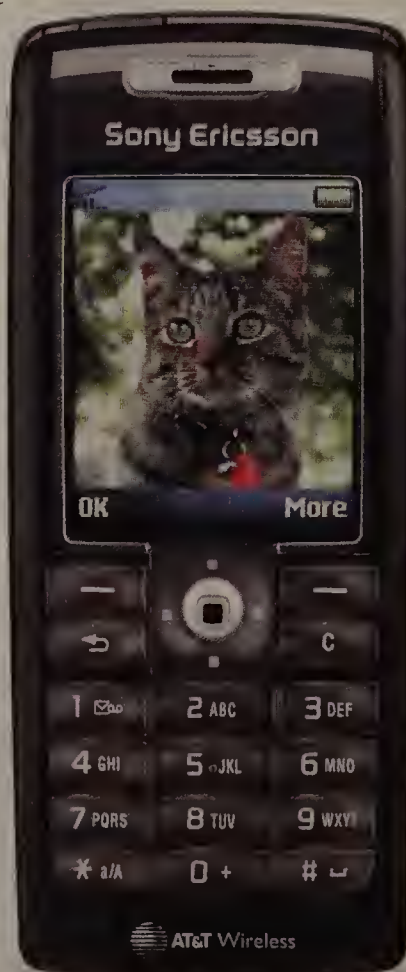
If you're lucky enough to have a flash on your camera phone, keep in mind that its light will only reach about five feet—so get up close and personal. If your phone doesn't have a flash, you can still take pictures indoors. Check your menu for a Night Mode or similar setting, which increases the sensitivity of your image sensor so you can grab indoor candids. You'll get more image noise (multicolored specks), but that's a minor trade-off for a shot of Uncle Bob wearing a punch bowl. Just be sure to turn off this mode when you go back outside—if you don't, all of your pictures will look orange, as though you took them on Mars.

Your camera phone's self-timer is also a great tool for getting sharp pictures in less-than-perfect lighting conditions. Rest the camera on a steady surface, compose the image, activate the self-timer, and press the shutter button. The camera counts for about ten seconds and then shoots. The steadier the camera, the sharper the shot will be.

Make Text Legible Many camera phones offer an Effects menu with options for sepia or black-

and-white images. These modes also have practical applications. For example, you may want to use the Negative mode when shooting pictures of black text on a white background. The result—white writing on a black background—is sometimes easier to read.

Customize File Names Instead of always assigning cryptic file names such as IMG_5402.jpg, some cameras give you the option to specify something more informative, such as Mexico Vac 001. Just remember to change the setting once you return home, or your friends might wonder why a shot of the Empire State Building is called Mexico Vac 443.



Move Pictures to Your Mac

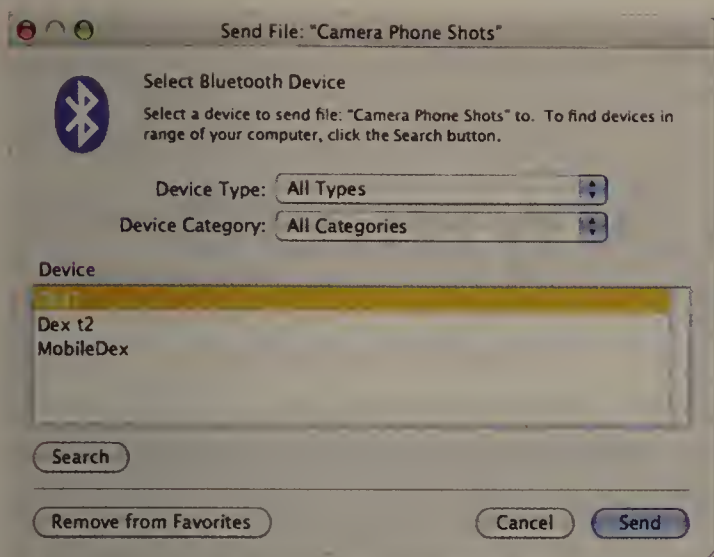
Most pictures taken with a camera phone never leave the device's memory chip. However, if your phone supports Bluetooth—a short-range wireless technology—you can quickly transfer its pictures to a Mac. The problem is that many instruction manuals do a terrible job of explaining just how this connection works. Here's the scoop.

What You'll Need To transfer pictures from a Bluetooth-enabled cell phone to your Mac, you need Mac OS X 10.2.8 or later, a Bluetooth-enabled Mac, and a Bluetooth-enabled camera phone.

Apple's latest iMacs, Mac minis, and laptop lineup include Bluetooth transmitters. If your Mac doesn't have built-in Bluetooth support, you can buy the \$35 D-Link DBT-120 Wireless USB Bluetooth Adapter (www.dlink.com), which plugs into the Mac's USB port.

All of the major cell-phone makers, including Motorola, Nokia, and Sony Ericsson, offer Bluetooth handsets. If your phone doesn't support Bluetooth, most service providers will let you

Smart Snapshots



Reverse the Flow To send a selected photo to your camera phone, choose it from the list of available Bluetooth devices and click on Send.

upgrade to a newer phone for a small fee. You can see a sampling of Bluetooth-equipped cell phones at macworld.com/0720.

Make the Connection Once you're equipped, the first step is to pair the phone with your Mac. This clever security step ensures that interlopers can't send you their photos without your permission.

To create this union, open your Mac's Bluetooth preferences (located in the Hardware section of System Preferences), click on the Devices tab, and then click on Set Up New Device.

On your cell phone, locate the image you want to download, and send it. If you've paired your phone with other Bluetooth devices, you'll have to choose your Mac from the resulting list.

Once you've sent the picture, a message will appear on your Mac, asking you to accept the picture. Click on the Accept button to download it. In most cases, the Mac stores these downloads in your user's Documents folder.

Now that you've safely copied the image to your Mac, you can add it to iPhoto, publish it to a Web site, attach it to an e-mail, and more.

Upload Photos to Your Phone

Bluetooth isn't just a one-way street. You can also send images from your Mac to your phone—turning it into a portable photo album.

Two-Way Street Open the Bluetooth preference pane, click on the Settings tab, and select the Show

Tip

Camera phones spend much of their life in pockets, at the bottom of purses, and in other lint-laden locations. As a result, their lenses can get downright disgusting. To keep your photo subjects recognizable, consider giving the lens a good cleaning on a weekly basis. You can use a dry cotton swab for the job. However, I prefer LensPen's CellKlear pen (\$9; www.lenspen.com).

Many people view their cell phone's built-in camera as a novelty, but you can do plenty of useful stuff with this feature.

Overcome Language Barriers When traveling abroad, you may have trouble asking in a foreign language for a cab or the restrooms. As a backup plan, spend a few minutes taking shots of these items. If the language barrier gets in the way, simply point to the picture you have stored on your phone.

Jog Your Memory How many times have you forgotten where you parked your car in the airport lot? Next time, before you hop on the shuttle bus, snap a shot of the lot number nearest your car. This technique also works in shopping malls, baseball stadiums, and concert arenas.

Start a Photo Blog If you have an Internet-enabled camera phone, you can publish pictures directly to a photo blog, using a free service such as SplashBlog (www.splashblog.com). Friends and family can use an RSS reader, such as Apple's Safari browser, or their own smart phone to subscribe to your RSS feed and receive your pictures as you post them.



Bluetooth Status In The Menu Bar option. This adds a Bluetooth icon to your OS X menu bar at the top of the screen. If you click on this icon, you'll get a pull-down menu with additional transfer options. Select Send File from this menu. In the resulting dialog box, navigate to the image you want to transfer, and then click on Send.

In the next dialog box, select your cell phone from the list of available devices, and then click on Send again (see "Reverse the Flow"). The transfer process will begin. Switch to your cell phone and authorize it to receive the file.

Think Small Most cell phones can't handle large files, so be sure to keep them small. I usually crop my images to 160 by 120 pixels. To do this in iPhoto, go to File: Export, select the Scale Images To No Larger Than option, and enter 160 in the text field. iPhoto will automatically fill in the other number for you. If you get an error message when transferring the file to your phone, the picture dimensions may be too big or the file size may be more than your phone can handle. Trim the image a bit more and try again.

Enhance Pictures in iPhoto

Camera phone pictures often lack contrast, saturation, and sharpness. To put some life into your shots, import them into iPhoto and use the Enhance button in Edit mode. For even more editing control, click on the Adjust button and, in the Levels section, bring the two endpoints to the edge of the histogram. You'll probably see more image noise but also much improved contrast and saturation. Finish the job by applying some sharpening, if needed. □

DERRICK STORY is a professional photographer, an author, and a teacher. For more photography tips, you can listen to his weekly podcast at www.thedigitalstory.com.

Get Online from Anywhere

Until recently, if you wanted to get online while on the road, you had two main options: jack in to your hotel's in-house network or find a Wi-Fi hotspot. But a third option is slowly gaining traction: 3G (third-generation) cellular data networks. With a single account and a single piece of hardware, you can theoretically get high-speed Net access from almost anywhere you can use your cell phone.

Mac users have so far been spectators in the 3G revolution. Until recently, 3G hardware vendors and network providers have only supported Windows. Fortunately, just as cellular data networks have become nearly ubiquitous, options for connecting to them with a Mac have finally started to emerge.

Right now, three types of 3G networks are in use in the United States. Sprint Nextel and Verizon Wireless both use a technology called EV-DO (Evolution-Data Optimized), while Cingular Wireless has deployed two related technologies called UMTS (Universal Mobile Telecommunications System) and HSDPA (High-Speed Downlink Packet Access). T-Mobile's offerings are still confined to last-generation EDGE (Enhanced Data

Rates for GSM Evolution) technology, which runs much more slowly (see "The Flavors of 3G").

Regardless of the specific technology, 3G networks typically support download speeds of 150 Kbps to 700 Kbps; for uploads, you'll get 150 Kbps max. (Vendors will claim much higher theoretical speeds, but you won't get them in real-world use.) Those speeds will probably increase in the next 12 to 18 months.

In the Cards

So how's a Mac user to tap into 3G? The first option is to get a plug-in 3G modem for your laptop and an account that will let it connect to the Internet.

Right now, Verizon is the only 3G carrier that fully supports the Mac. An account will cost you about \$60 a month. If you commit for a long period of time, that fee includes a PC Card modem you can plug into your PowerBook; otherwise, you will pay extra for the modem. It's possible to set up a PC Card account with Sprint and Cingular. But Sprint doesn't support the Mac at all, and Cingular only does so unofficially (meaning you can get it to work but the company can't help you).

Setting up the card and account with Verizon is dead easy. In my testing, it took one download, a single restart (a necessary evil for some network-level software), and *zero* data entry to get the card working on the network. Verizon is currently supplying customers with one of two 3G modems: the Kyocera KPC650 or the Audiovox PC5740. Both of these are PC Cards, which owners of PowerBooks can use. So what if you don't have a PowerBook? The MacBook Pro is equipped with the new (and superspeedy) ExpressCard/34 slots—owners of those newer laptops can't use PC Cards. Cell phone companies have been cagey about when they'll make ExpressCard 3G modems available. Several vendors demonstrated prototypes of ExpressCard/34 3G modems this past spring at a cellular industry trade show; the first 3G ExpressCard/34 hardware should be available by the time you read this, with Mac drivers available a few



CHECK IT OUT

Laptop Bags of the Month

The student in your life will appreciate Targus's new Feren backpack (\$70; www.targus.com). Besides the usual accoutrements (a large organizer pocket, an iPod pouch, a mobile phone holder, a padded back, and so on), the Feren provides loads of space for books, a small external pocket for an ID and bus fare, and three insulated pockets—one for lunch and two for drink bottles. Its padded laptop sleeve fits laptops with 15-inch or smaller screens, and the bottom of the pack is water resistant.



If you don't need a lot of storage space, Brenthaven's Metro (\$70; www.brenthaven.com) offers the best protection I've seen in a compact



case. The company's CORE system suspends your 15-inch (or smaller) laptop in a rigid but cushioned pocket, and the case as a whole is built to withstand abuse. A rear pocket holds documents; a small front organizer pouch accommodates essential accessories such as a mobile phone, an iPod, an AC adapter, and cables; and a cushioned strap pad makes it easy to carry. Did I mention that it looks great?—DAN FRANKS

months later. Sprint has informal, unannounced plans to offer a USB EV-DO modem, which should also have OS X drivers, as early as this fall.

Tethered Phones

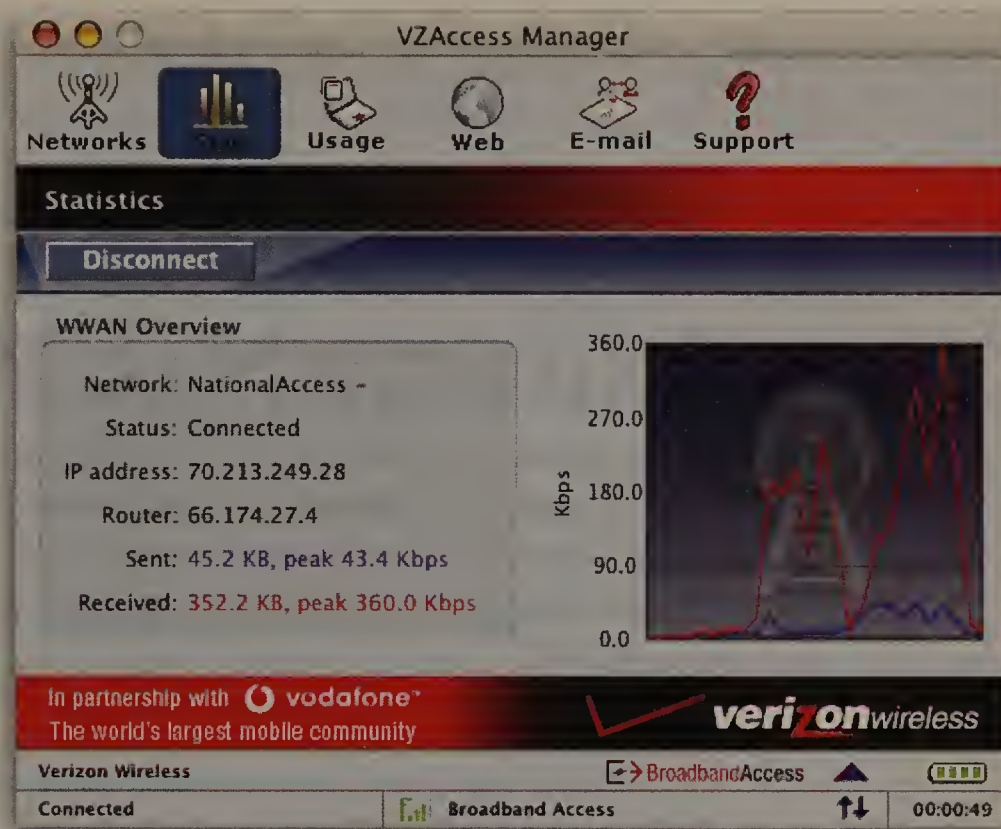
If you can't use a PC Card, or if you want to use a company other than Verizon, your alternative is to connect your laptop to a 3G-ready phone via USB or Bluetooth and get a "tethered phone" data plan from your cellular provider. Such plans typically cost slightly less than the plans for PC Cards, because they don't include those cards. And setting up a tethered phone connection is usually a trivial task, similar to setting up a dial-up phone connection.

The hardest part is finding a Mac-compatible 3G-ready phone. Tracking down such a phone on a service provider's Web site is challenging, so your best plan is to directly contact your carrier of choice and ask.

Unfortunately, none of these carriers officially supports Mac OS X when it comes to using their phones as 3G modems. Even worse, while OS X supports many 3G phones via Bluetooth (using its dial-up networking profile) and via USB, it can be hard to determine whether it supports yours.

Third-party software can help out—not only with connecting your Mac via a 3G phone, but with using a PC Card modem that doesn't have official OS X support. Smith Micro's QuickLink Mobile (www.smithmicro.com) supports dozens of phones and many PC Cards in all the major cellular-data technologies. QuickLink Mobile is sold for specific phones or PC Cards and for specific carriers. It costs \$30 for phones that work with Bluetooth, \$40 for PC Card support, and \$50 for phones that require a USB cable. The software is available as a download only, with the cable sent separately if needed. There's no evaluation version.

Nova Media's launch2net (macworld.com/1468) also supports phones and PC Cards, but it specializes in EDGE, UMTS, and HSDPA. It's about



\$100 to download; a time-limited evaluation version is available.

The best strategy for establishing a tethered connection is to head down to your local cell phone store. Your first task is to see whether there's OS X support for the phone you want. If not, your second task is to download the software from Smith Micro or Nova Media and hit the store again to make sure it works with your Mac and your phone.

Do Your Research

Want to know more about 3G? While its operators may veer into overenthusiasm at times, EVDOinfo.com is the single best resource for Mac (and Windows) users trying to figure out how to use the latest cards, networks, and software from U.S. carriers. The site offers free advice and hacks. The discussion forums are stocked with knowledgeable users, making it the best place to ask a cell data question—or find an answer by searching archives. □

GLENN FLEISHMAN writes daily about Wi-Fi, broadband, and cell wireless data at Wi-Fi Networking News (wifinetnews.com)

Am I Online?

Verizon Wireless's VZAccess Manager gives you a slick Mac OS X interface to monitor your 3G connection.

THE FLAVORS OF 3G

See how third-generation (3G) cellular data services from Cingular Wireless, Sprint Nextel, T-Mobile, and Verizon Wireless compare.

COMPANY	CONTACT	TECHNOLOGY	TYPICAL MAXIMUM SPEED (UPLOADS)	TYPICAL MAXIMUM SPEED (DOWNLOADS)	MAC SUPPORT	PC CARD ACCOUNT PER MONTH ^a	REPORTED AVAILABILITY OF EXPRESSCARDS	TETHERED PHONE ACCOUNT PER MONTH
Cingular Wireless	www.cingular.com	UMTS, HSDPA ^b	50 Kbps (UMTS), 150 Kbps (HSDPA)	250 Kbps (UMTS), 700 Kbps (HSDPA)	unofficial	\$60	fall 2006	\$60
Sprint Nextel	www.sprint.com	EV-DO	144 Kbps	700 Kbps	none	\$60	summer 2006	\$50
T-Mobile	www.t-mobile.com	EDGE	50 Kbps	150 Kbps	none	N/A	N/A	\$30
Verizon Wireless	www.verizonwireless.com	EV-DO	144 Kbps	700 Kbps	full	\$60	end of 2006	\$15 ^c

N/A = not available. ^aRequires voice subscription and a two-year plan commitment. ^bSlower UMTS service is available through phones; faster HSDPA is available through PC Cards. Available as an option with a SmartPhone voice-data subscription.

Extreme Mac Makeover

Mac OS X is a slick and beautiful operating system. Still, the allure of personalizing one's environment—to make it more aesthetically pleasing—is tempting. Why should your Mac look like everyone else's? Luckily, with the help of a few inexpensive applications and system hacks, you can give your interface a whole new look.

Apple usually frowns upon system hacks (also known as *haxies*) because these interface tweaks involve replacing system files. It *is* true that a haxie can occasionally interfere with some applications, especially when you upgrade your OS. If you choose to modify your interface, use caution. It's usually best to disable all haxies before upgrading.

As I write this, there's very little support for interface manipulation on Intel Macs. In particular, Unsanity (www.unsanity.com), a company that specializes in interface modifications, hasn't yet released Universal versions for many of its applications (to see a compatibility list, go to macworld.com/1488). An Unsanity representative stated that Universal versions for all products were in the works.

Change Your Look

When you renovate a house, nothing gives you more bang for the buck than a new paint job. You'll get the same impact on your Mac when you change its *theme*. A theme is a replacement set of windows, buttons, process bars, menus, and fonts. It can change the

color of your interface elements and the texture of the windows (see “Your Mac, Your Way”).

If you're using Mac OS X 10.4 (Tiger) with a non-Intel Mac, the best way to modify your theme is to use Unsanity's \$20 ShapeShifter 2.3.1 (macworld.com/1489). This application replaces OS X's interface elements with ones you create or download. (It also saves a backup of your original files so you can revert to them later.)

ShapeShifter lets you download some featured themes from within the application, but you have even more choices online—from themes that may look like Windows XP and Be OS to ones customized for the holidays (see “You’ve Got the Look”). Some of my favorites (all available from InterfaceLift) include Daisuke Yamashita’s Neos and Pulsar, Takashi Izawa’s Shinobi, and John Tewksbury’s Titanium.

To select a theme, open the ShapeShifter preference pane and click on the Download tab for a preview of a featured theme. Click on Next to browse through the others. If you like one, click on Download. When the download finishes, click on the Apply tab and then on the arrow next to Themes. You'll see the theme's name in the list here. Select it and the preview window offers a glimpse of how it will look (for a more comprehensive view, click on Preview). When you've settled on what you want, click on Apply Changes. Log out and log back in (under the Apple menu, choose Log Out *user name*) to see the full effect. If you want to get back to your original look, click on Restore Defaults.

ShapeShifter doesn't just affect the Finder windows and menu bar. Applications such as Apple's iTunes and iPhoto get a makeover, too. If you don't like how a particular application looks with a new theme, you can choose to exclude it. Click on the Exclude List tab in the ShapeShifter preference pane and add the application to the list.

Before ShapeShifter 2 came out, you were essentially stuck with a theme's quirks. Sometimes, particularly in dark themes, you'd end up with unreadable text (black text on a black background, for instance). Not anymore—if you don't like something about a theme,



Your Mac, Your Way I customized my Mac using Unsanity's ShapeShifter to apply Daisuke Yamashita's Neos theme in white **A** (macworld.com/1497). Then I turned to ShapeShifter's options to improve text legibility and darken the sidebars **B**. Enlisting Panic's CandyBar, I replaced all the icons with Sascha Höhne's Snow E.2 collection **C** (macworld.com/1498). My desktop picture is FraxDesk no.7, by Scott Chitwood **D** (macworld.com/1499).

you can tweak it. In the Apply tab, you'll find a Tweak button. This launches the guiTweak application, which lets you alter the color of any theme element.

Overhaul Your Icons

If you're not quite up to a complete theme change or if you want to take your theme even further, consider updating your icons. It's a snap to change a few icons here and there. If you're using OS X 10.3 or higher, just click on the icon you want to copy in the Finder and choose Edit: Copy (⌘-C). Then click on the folder or file to which you want to assign this icon, press ⌘-I to open the Get Info window, click on the small icon image, and choose Edit: Paste (⌘-V).

For a systemwide icon swap, both Intel and non-Intel Mac users can turn to Panic's CandyBar 2.6.1 (\$13; macworld.com/1490). CandyBar can replace practically every icon on your computer, including system, volume, network, media, and application icons.

You can pick and choose what type of icons you want to replace. For instance, if you'd like all your document icons to have a new look, click on the System tab in the CandyBar window. Then drag and drop your new icon into the Documents well and click on Apply System Icons. You must provide an administrator password and then click on Relaunch Finder to apply your changes.

If you want to replace *all* of OS X's icons, check out CandyBar's iContainers. Use these prepared packages of system icons to quickly revamp the look of everything from your external hard drives to your home folder. CandyBar comes with two sample iContainers, Litho and Monolith System. Go to the Iconfactory (macworld.com/1491) to find more. Double-click on an iContainer file to populate all the wells in the CandyBar window with new icons. Click on Apply System Icons, provide an administrator password, and click on Relaunch Finder to apply your changes. Anytime you want to change back to OS X's default icons, just click on Restore Icons and then click on Relaunch Finder and Relaunch Dock.

If you want to collect even more custom icons—*Battlestar Galactica*, *Star Wars*, and holiday sets, for example—download Panic and the Iconfactory's \$19 icon organizer, Pixadex 2.0.2 (macworld.com/1492). Browse the many Pixadex iContainers at macworld.com/1493. Drag icons from Pixadex directly into CandyBar wells.

Make Your Desktop Your Own

Your desktop picture defines your Mac's overall look, so why settle for standard fare? After all, this image stares at you every morning after you turn on your computer. The easiest way to change it is by going to the Desktop & Screen Saver preference pane. Click on the Desktop tab and then use the list on the left to choose from Apple's supplied photos and colors, or to navigate to and select any image on your computer.

YOU'VE GOT THE LOOK

Whether you're looking for a subtle palette change, special icons, or a wholesale Mac face-lift, you'll find free, downloadable resources online. (The replacement icon for the Trash [right] is from Iconfactory.)



WEB SITE	URL	RESOURCE TYPE
Flickr	www.flickr.com	desktop pictures
Iconfactory	www.iconfactory.com	icons
InterfaceLift	www.interfacelift.com	themes, icons, desktop pictures
MacThemes	www.macthemes.net	themes
Rad.e8 Design	macworld.com/1500	icons, desktop pictures
Rampant Mac	www.rampant-mac.com	desktop pictures
ResExcellence	www.resexcellence.com	themes, icons, desktop pictures, Mighty Mouse cursors
Wallpaper Vault	www.wallpapervault.com	desktop pictures

Don't miss the Change Picture option at the bottom of that window. After you choose a folder of images, select this option and then pick a time frame—for example, every day or every five minutes—from the pop-up menu. Now your desktop picture will cycle through the folder of images. If you're using iPhoto 6, you'll find this option grayed out when you select one of your iPhoto photo albums. See macworld.com/1494 for a workaround.

But what if you want to take your desktop to the next level? Don't hesitate to get creative with the abundance of images you'll find online. You can even get Automator involved. In *The Mac OS X Tiger Book* (Wiley, 2005), Andy Ihnatko outlines an Automator workflow that snags NASA's Astronomy Picture of the Day and sets it as the desktop background. (Download the workflow at macworld.com/1495.) Put a workflow like this in your Login Items, and you'll automatically get a brand-new desktop picture every day. Go to the Accounts preference pane and click on the Login Items tab. Click on the lock and enter your administrator password. Finally, click on the plus sign (+) and navigate to the workflow.

If you don't easily get motion sickness, you might try a moving desktop. Julien Couthouis's free CoolBackground (macworld.com/1496) lets you use a screen saver as your desktop image. The program is processor intensive, so use it only if you have a very fast Mac. CoolBackground works only with non-Intel Macs running OS X 10.4.

Remember the Little Things

If you're on a mission to customize every corner of your Mac, don't leave your cursor behind. Another Unsanity application, the \$10 Mighty Mouse (non-Intel Mac only; OS X 10.3 and higher), can turn your mundane cursor into a Stealth fighter, a shark, a smiley, and more. Mighty Mouse also lets you change the size of your cursor. (Magnify the cursor to the largest size and you'll see why Unsanity calls it mighty!) □

ANTON LINECKER is a writer and technical advisor living in Los Angeles.

Mac OS X Hints

The Insiders' Tips You Won't Get from Apple

Drag-and-Drop Disk-Image Creation

Using Disk Utility (/Applications/Utilities), you can create a disk image—a sort of virtual hard drive—from any folder in OS X. I use disk images for quite a few things: Classic lives on a compressed disk image on my Mac. I make disk images out of game CDs—you can play some, but not all, games with the disk image mounted instead of having the original CD in the drive. I also keep a FileMaker Pro database of passwords and other sensitive information on an encrypted disk image, which I can travel with, with some degree of security.

Want to avoid the tedious process of opening Disk Utility, selecting Image: New: Image From Folder, and then navigating to the folder you want to turn into a disk image? You can. Drag-and-drop disk-image creation disappeared from OS X 10.3 but quietly returned to OS X 10.4. Now just drag your folder onto the Disk Utility application icon—whether it's in the Dock, the Finder, or the Finder's sidebar or toolbar (see “Quick Disk Images”). Disk Utility will launch, displaying the New Image From Folder dialog box. Select an image format (options include Compressed and Read-Only), and then decide whether you'd like to encrypt the image so only you can open it. That's it!

Hop through Spotlight Results

When you use Spotlight to search in OS X 10.4 (by pressing ⌘-spacebar or clicking on the Spotlight icon in the menu bar), the results appear in a drop-down list,

sorted into groups: Applications, Documents, Folders, and so on. Once the results appear, you can select any item in the list with the mouse, or by using the up- and down-arrow keys. But the keyboard shortcuts don't stop there—these tricks can also help you quickly get to your selection.

First, if you want to select the Top Hit item, just hold down ⌘ and press return. To quickly jump between categories, use ⌘-down arrow and ⌘-up arrow. Once you're in the desired



Quick Disk Images To create a disk image quickly and easily (in OS X 10.4 or 10.2, but not 10.3), just drag and drop a folder or folders onto the Disk Utility icon.

category, use the arrow keys to scroll through it. You can jump to the bottom or the top of the entire list by pressing control-down arrow or control-up arrow (or by using the end or home key). Finally, if you want to modify your search term, you can press control, option, or ⌘ and the left or right arrow to jump to the beginning or end of the search field.

Quickly Change iCal's Visible Hours

Apple's iCal lets you use three views to check your calendars: Day, Week, and Month. For the Day view, you can choose the number of hours visible on screen by going to the program's preferences. But there may be times when you want—or need—to see more hours (say, for long days with travel and late appointments) or fewer hours (for days when you don't have much going on). Fortunately, there's a simple way to change this without having to take a trip to preferences. You can do it with your mouse's scroll wheel, or even with two-finger scrolling on a trackpad (on a Mac laptop that offers this feature, such as the MacBook Pro and certain PowerBook G4 models).

Simply move your cursor over the Day or Week display (the actual window, not the button), hold down the option key, and then scroll down to show fewer hours or scroll up to show more of the day in iCal's window. If you're using a trackpad, hold down the

WHAT'S ONLINE

> Limit the Bash Shell's Prompt Length

Learn a couple of ways to limit the length of the bash shell's prompt.

macworld.com/1470

> Open New Blank Pages in Safari

Check out this time-saving tip for a getting a blank page when you open a new browser window in Safari.

macworld.com/1471

> Listen to Music without Adding It to iTunes

You don't have to add a music file to your iTunes library just to listen to it.

macworld.com/1472

Is It Running?

One thing that trips up new Mac users who've switched from Windows is the different behavior of application windows in OS X. In Windows, if you close your last Word document's window, for instance, you quit Word. That's not true with the Mac—the file you're working on and the application itself are more independent of each other.

In OS X, if you close a window in an application—via the red dot in the upper left corner or the File: Close Window menu item—you almost certainly haven't quit the program itself. Look at the menu bar at the top of your screen to see. If you close a Word document, for instance, you'll still see the Word menu next to the Apple menu, which indicates that the application is still active. (Like any good rule, this one has exceptions: some programs that use only one window, such as System Preferences, iPhoto, Backup, and Calculator, *will* quit when you close their windows.) To quit any program on the Mac, choose the File: Quit menu item, press ⌘ -Q, or control-

click on the application's icon in the Dock and choose Quit from the contextual menu.

Leaving too many programs open at once can cause your system to slow down. So how can you tell what's currently running? There are two very easy ways. The first is to just look at the Dock. Any running program's icon will have a black triangle beneath it, or the triangle will be beside it if you've

moved the Dock to a screen edge (see "Application Avalanche").

The second is to press and hold ⌘ and then press the tab key.

When you do, the OS X application switcher will appear on screen.

Each time you press tab again

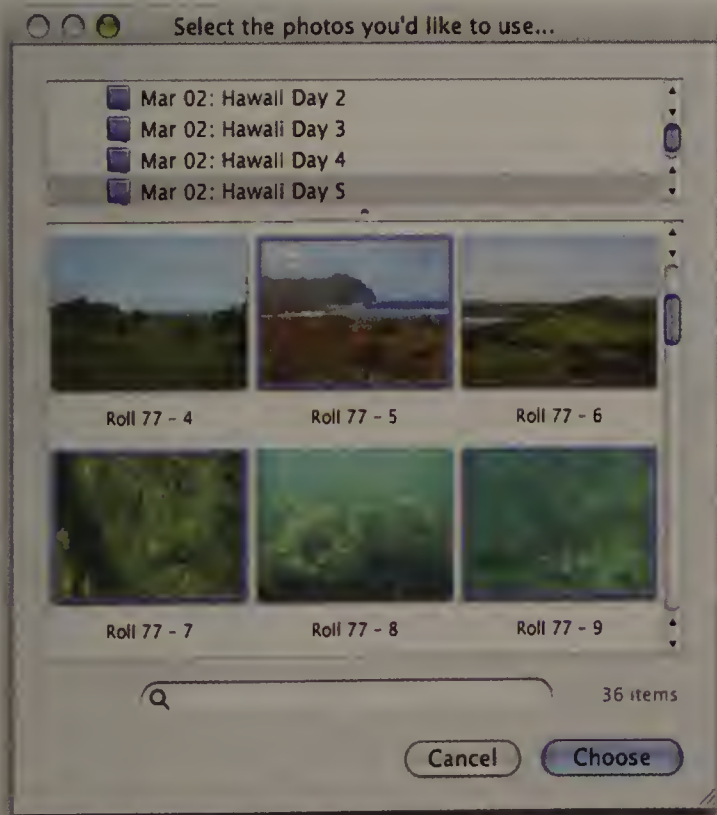
(while continuing to hold down ⌘) the switcher will move to the next open program's icon (the application's name will appear under its icon). If you see a lot of programs listed, and your machine feels slow, quit the ones you're not using. You can do this easily by pressing Q when the application you want to quit is selected in the application switcher.—ROB GRIFFITHS



Application Avalanche If your computer is feeling slow, check the Dock to see what's running (as indicated by black triangles beneath icons).

option key and use two fingers to scroll down or up. (See a movie of what happens at macworld.com/1469.)

As you scroll, you'll see more or less information for each event—the more hours you show, the less information will be visible. If your iCal window is small, you'll lose the times for some or all of your events, which will shrink to one line. Show fewer hours to expand your events. Do this as needed, and you no longer need to worry how many hours you set in iCal's preferences.



Pick a Photo Using Tiger's Automator, you can create a one-line program that will display this handy iPhoto library browser; then choose one or more images from the browser and drag them to where you want to use them.

Access a Systemwide Photo Browser

If you frequently use photos in documents or send them to friends and family, you might have discovered that you can drag your shots from Apple's iPhoto 6 (part of the \$79 iLife '06; ⌘ ⓂⓂⓂⓂ; macworld.com/1131) into almost any application. At times, though, being able to grab a single picture *without* launching iPhoto would be convenient. After all, the program can take a while to launch if you have many pictures or a slow Mac.

If you have iPhoto 6 and OS X 10.4, you can use Automator to access a systemwide photo browser that gives you quick access to your entire iPhoto library. To start, open Automator. In the Library column, click on iPhoto. A list of actions will appear in the Action column. Select Ask For Photos, and drag it to the right-hand pane. Select File: Save. Give the workflow a name, for example iPhoto Browser, and then choose Application from the File Format pop-up menu to save your workflow as an application. Save it anywhere—in your Applications folder, perhaps. (Later you can drag this little application to the Dock if you plan to use it often.) Finally, click on Save.

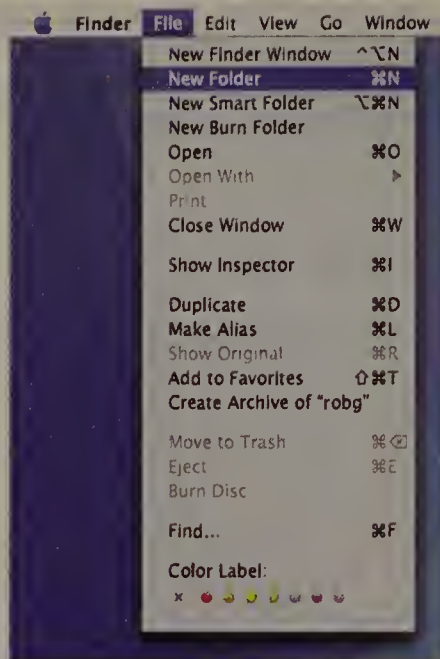
Launch the application to view its simple interface (see "Pick a Photo"). From here you can scroll through your entire library, select an album and scroll through its contents, or use the Spotlight search field to search for a photo by its title or keywords. When you find a photo you want to use, drag it to the desktop, to a folder, or straight into a document or an e-mail message. You can also select multiple photos by holding down the ⌘ key and clicking on several pictures.

You'll probably find this browser much faster than iPhoto when you're trying to find a picture. The only difference is that you don't have iPhoto's export



Have a hint? Go to the Mac OS X Hints Web site (www.macosxhints.com) to share it. This column was based on tips from Anthony DeCrescenzo, Michael Henley, Hank Postma, and anonymous contributors. Each month, the author of our favorite tip receives the *Help Desk* mug.

Go Old School Are you a longtime Mac user who wishes that the ⌘-N shortcut still made new folders in the Finder? If you're running OS X 10.4, you can make it so, using nothing more than the system's built-in tools.



the years. One small adjustment was losing the shortcut ⌘-N for creating new folders in the Finder. With the first version of OS X, Apple assigned ⌘-N to the New Window command and ⌘-shift-N to the New Folder command. Many people found the change jarring, as years of muscle memory caused them to open new windows when they wanted to create new folders. But now there's a way to get the old shortcut back, using nothing more than the tools built into OS X 10.4. (This trick won't work in OS X 10.3.)

You can use OS X's built-in ability to create systemwide keyboard shortcuts to change the behavior of ⌘-N. First, open the Keyboard & Mouse preference pane; then click on the Keyboard Shortcuts tab. Using the options here, you can assign any action you'd like to ⌘-N, once you reassign its current function to a new shortcut.

Click on the plus sign (+) at the window's lower left to add a new shortcut. In the sheet that appears, set the Application menu to Finder, enter **New Finder Window** in the Menu Title field, and then enter the key combination you want in the Keyboard Shortcut field—option-control-N, for instance (as long as it's not ⌘-N). Click on Add to

options—dragging pictures from this browser will always give you full-size photos.

Bring Back the Old ⌘-N

If you've been using a Mac since the days of OS 9, when the iPod was just a glimmer in Steve Jobs's eye, you've had to change your ways quite a bit over

create this redefined shortcut. Now that ⌘-N has been freed from the New Finder Window command, you can reassign it to the New Folder command. Click on the plus sign again. In the sheet that appears, set the Application menu to Finder, enter **New Folder** in the Menu Title field, and enter ⌘-N in the Keyboard Shortcut field. Click on Add.

Now close the preference pane and switch back to the Finder. To make your changes take effect, you need to restart the Finder. One easy way to do that is to press and hold the option key and then click and hold on the Finder's Dock icon. When the contextual menu appears, select Relaunch. If everything worked, your shortcuts will appear in the File menu when the Finder restarts (see "Go Old School").

Your last task is to reassign the New Finder Window command to the shortcut ⌘-shift-N, completing the swap. (You can't do this during the previous step, since you must free up one of the keyboard shortcuts in order to assign it to the other command.) Open the Keyboard & Mouse preference pane again and click on the Keyboard Shortcuts tab. Scroll through the list of shortcuts until you see the Finder entry in the Application Keyboard Shortcuts section. Click on the disclosure triangle next to the Finder entry, and you'll see the two commands you created. Click on the shortcut next to the New Finder Window entry, enter ⌘-shift-N, close the preference pane, and then relaunch the Finder again to make the newly assigned shortcut effective.

If you decide that you prefer the standard OS X behavior, go back to the Keyboard & Mouse preference pane, click on the Keyboard Shortcuts tab, scroll down to the Finder entry, and find the two Finder shortcuts you created. Highlight them both and click on the minus sign (-) to delete them. Restart the Finder, and you're back to a stock setup. □

Senior Editor ROB GRIFFITHS runs the Mac OS X Hints Web site (www.macosxhints.com). KIRK McELHEARN is the author of *How to Do Everything with Mac OS X Tiger* (McGraw-Hill Osborne, 2005).



POWER TIP OF THE MONTH

Turn Your Mac into a Musical Alarm Clock

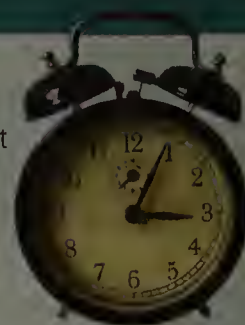
Tired of waking up to your boring old clock radio? Use your Mac as an alarm clock instead, and you can wake up to your favorite music. All you need are a few built-in OS X tools: Automator, the Energy Saver preference pane, and iTunes.

To begin, open Automator. Click on Finder in the Library column. Then in the Action column, click on Launch Application and drag this action to the workflow area at the right of the window. Select iTunes from the application pop-up menu.

Click on iTunes in the Library column; then drag the Get Specified iTunes Items action to the workflow area and place it below the first action. Click on the plus-sign button (+) and select a playlist. With iTunes still selected in the Library column, drag Play iTunes Playlist to the bottom of the workflow

area. Select File: Save. Name the workflow and select Application from the File Format pop-up menu.

Open the Accounts preference pane, click on the Login Items tab, and drag your workflow to the Login Items list. Then open the Energy Saver preference pane, click on Schedule, and choose the time to start up your Mac. When it starts, the Automator workflow will run, telling your Mac to play the selected iTunes playlist. Make sure you don't have any speakers plugged into your Mac—if they're not turned on, you won't hear anything, and there's no point in leaving your speakers on all night. Your internal speakers—even on a laptop—will be fine for this early-morning serenade.—KIRK McELHEARN



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Mac 911

Solutions to Your Most Vexing Mac Problems

Restoring Sidebar Entries

I accidentally removed the Computer entry from the Finder sidebar. How can I get it back?

Nathan Parker

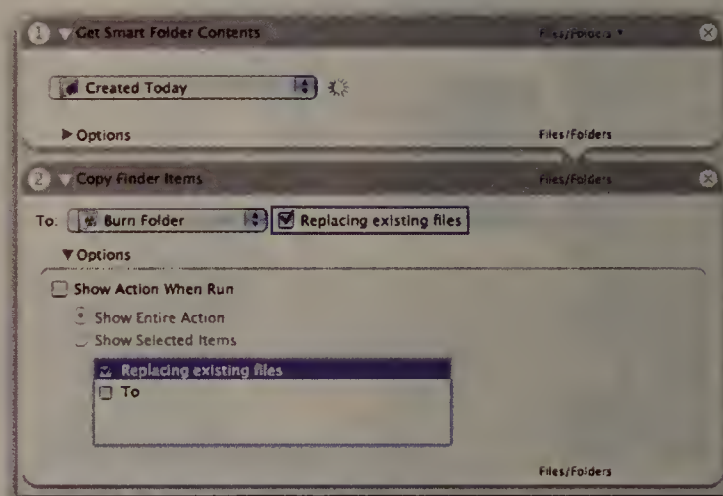
It's easy enough to lose things in the sidebar—drag them out, and they disappear in a puff of smoke. Thankfully, they're easy to replace. Choose Finder: Preferences, click on the Sidebar tab, and enable Computer. Your computer will reappear in the sidebar. Want to add other items to the sidebar? Just select them in the Finder and press ⌘-T.

Smarter Backup Burning

I've got a smart folder in the Finder to track files created or modified after a certain date. I would love to be able to burn the contents of this folder to a disc for backup. But it looks as though it contains only aliases. Is there any way to burn the actual files to disc?

Victor Navone

You can do it, if you use Automator in league with a burn folder. First, in the Finder create a burn folder (File: New Burn Folder.) Next, grab a copy of Johan Carlsson's Get Smart Folder Contents Automator action (macworld.com/1461). Install this action and then create the following workflow:



Ooh, That Smarts! Combine a smart folder, a burn folder, and this Automator action to back up your work with ease.

1. Get Smart Folder Contents. From the pop-up menu, select the smart folder that contains the files you want to back up.

2. Copy Finder Items. Choose the burn folder you just created from this action's To pop-up menu. Assuming you'll always be burning the folder's contents to disc immediately after running this workflow, click on the Options triangle and enable the Replacing Existing Files option. This will ensure that the workflow copies only truly new files to the burn folder (see "Ooh, That Smarts!"). Once you've configured the workflow to your satisfaction, choose File: Save As and save the workflow as an application.

When you're ready to copy the current contents of your smart folder to the burn folder, double-click on the app you've created. Insert a blank disc in your burner, and click on the burn folder's Burn button.

You can accomplish much the same thing less conveniently without Automator. Just create a burn folder, open the smart folder containing your recently modified files, and drag its contents to the burn folder. Although the smart folder's contents are aliases, the burn folder will burn the original files to the disc.

Tweaking Pages' Templates

Is there any way to change the default paper size and font in Apple's Pages documents? My new documents always open in A4 paper size, and I end up changing them to letter size every time.

David Albrecht

My fervent prayer is that a future version of Mac OS will allow you to save individual Page Setup config-



TIP OF THE MONTH

Launching at the Office

Every time I install Microsoft Office, it insists on putting all the Office applications in the Dock. I have quite enough applications there already, thank you. There's only one Office application I do want there: the Project Gallery Launcher (/Applications/Microsoft Office 2004/Office/Project Gallery Launcher).

The Project Gallery Launcher streamlines two daily tasks: First, I often use templates—my electronic letterhead, fax cover sheet, or a blank document—to start new documents. The Launcher makes the process of picking a template and starting a new document simple. Second, I can easily look up recent Office documents from the Launcher, which has a preview pane that lets me view those documents by date (Today, Yesterday, This Week, Last Week, and so on). Best of all, it's really quick.

For years I ignored the Launcher, but now that it's living in my Dock, I use it much more often. And since picking a template requires opening the Launcher anyway, why not keep it close at hand?

K. M. Peterson



urations for each application—A4 in Pages, US Legal in Keynote, and so on. Until that happens, you have to hold out hope that the application in question provides a way to modify its templates and save those modifications. Fortunately, Pages does.

For example, if you routinely choose the Business Letter template from Pages' templates sheet, choose it, make the changes you want to its font and Page Setup settings, and choose File: Save As Template. Give it a name you're likely to remember—My Business Letters, for example—and click on Save. The template, complete with your new font and Page Setup settings, will be saved to the My Templates folder and will appear when you click on the My Templates entry in Pages' templates sheet.

A Roomful of Zoom

Recently, I attended a workshop where the presenter was using Keynote. When he wanted to show something on his screen in detail, he was able to zoom in on the cursor. Do you know how he did this?

Greg Larson

My guess is that he used the Universal Access preference pane, like so:

Launch System Preferences and click on the Universal Access preference pane. In the Seeing tab, enable the Zoom option and click on Options. In the sheet that appears, set the Maximum Zoom slider to 2 and leave the Minimum Zoom slider where it is. Enable the Only When The Pointer Reaches An Edge option at the bottom of the sheet and click on Done. Next, in the Keyboard Shortcuts tab of the Keyboard & Mouse pane, make sure you've enabled all the Universal Access shortcuts.

When you're ready to highlight something on screen, press ⌘-option-equal sign (=). Your Mac will zoom in by a factor of 2x, with the cursor in the middle of the magnified area. To move around, simply drag to an edge; the screen will scroll in that direction (see "Who's Zoomin' Who?"). To zoom out, press ⌘-option-minus key (-). To toggle zooming on and off, press ⌘-option-8. You can customize all of these keyboard commands in the Keyboard Shortcuts tab of the Keyboard & Mouse preference pane.

Slimming Mail's IMAP Messages

Sometimes, when I'm using Mail to check my IMAP e-mail account for one brief text message, I have to wait while a message with a huge file attachment downloads first. Is there any way to look at just the headers before Mail downloads entire messages?

Tony Sturges

Mail won't allow you to download just the headers. But it will let you download your messages without their attachments.

When using this computer, I would like assistance with:

Seeing Hearing Keyboard Mouse

VoiceOver: Turn VoiceOver on or off: ⌘F5

☐ On ☒ Off

Open VoiceOver Utility...

Zoom:

☒ On ☐ Off

Turn zoom on or off: ⌘⌥8

Zoom in: ⌘⌥=

Zoom out: ⌘⌥-

Options...

To do this, select Preferences: Accounts and select your IMAP account. Click on the Advanced tab. In the Keep Copies Of Messages For Offline Viewing pop-up menu, choose All Messages, But Omit Attachments. From now on, Mail will download just the messages. To retrieve attachments, you will have to click on the Save button in the messages that contain them.

For POP accounts, you can ask Mail to prompt you before downloading messages over a certain size. To do so, select the POP account, choose the Advanced tab, and enter a value in the field that reads Prompt Me To Skip Messages Over X KB. When a message comes in that exceeds the size you've set, Mail will ask you whether you want to skip it.

I do wish Mail was a bit more flexible in this regard. Let's say you've set up a schedule to download your mail every hour and you're not sitting in front of your computer when it starts. If you don't respond to Mail's prompt within 15 seconds, it will go ahead and start downloading messages even if they exceed your size limits. Entourage, on the other hand, allows you to download a portion of any message that exceeds a certain size. This means you can peruse the subjects at your leisure offline and then choose exactly which messages you want to download.

Covering Your Tracks

I'd like to delete specific, saved Google search entries without having to reset Safari. Is there a way to delete such cached entries individually?

Via the Internet

It's possible to cherry-pick the searches you'd like to clear, but frankly, it's a pain in the neck. As Mac 911 forum reader Peter Weber explains it, this is what you have to do: quit Safari, launch the Property List Editor from the Developer Tools (an optional installation found on the Mac OS X Installer disc), open /Library/Preferences/com.apple.Safari.plist, and look for recent searches in the RecentSearchStrings. Once you've found that list, select each entry you'd like to remove and click on the Property List Editor's Delete button. Close the window and click on Save in the sheet that appears, and the entries you deleted will no longer appear in the list of searches.

continues

Who's Zoomin'

Who? Mac OS X's Universal Access preference pane can help you put the focus on an important part of your screen.



Send your tips to mac911@macworld.com. If we publish yours, you'll receive this dandy mug. All published submissions become the sole property of Macworld.

If you'd rather save your neck, there are a couple of ways to clear out old searches en masse.

The first is to click on the magnifying-glass icon in Safari's Google search field and choose Clear Recent Searches. This prevents prior searches from appearing as autofill entries. Firefox includes a similar feature. Just control-click on the Google search field and choose Clear Search History.

To complete the cleansing, open Safari: Preferences, click on the AutoFill tab, and click on the Edit button next to the Other Forms entry. Choose .google.com from the sheet that appears and click on Remove. This zaps any Google autofills.

If you want to prevent Safari from recording your searches in the future, turn on Private Browsing (found under the Safari menu). With Private Browsing on, Safari won't add Web pages to its history, it will automatically remove items from its Downloads window, it won't create autofill entries, and it won't add searches to the Google search field.



TOOLS OF THE TRADE

The Extended Network

You've got an iMac in your home office, a Mac mini nestled into your living-room entertainment center, and a MacBook that follows you around the rest of the house. For you, the days of one computer and one Internet connection are over—you want access to the Web from wherever you are. Here are some tools that will help.

Wireless Router With a wireless router you can blast your cable or DSL connection throughout your house. Countless companies, including Linksys, Netgear, Belkin, and D-Link, offer wireless-G routers for around \$50. Or you can go with the higher-priced (\$199)—though more easily configured—Apple AirPort Extreme Base Station.

AirPort Express Base Station If you opt for the AirPort Extreme Base Station, pick up one of Apple's \$129 AirPort Express boxes. It will extend your wireless network by linking it to the larger Extreme Base Station. This used to be a confounding process, but with the latest AirPort software, it's a cinch.

Power-Line Adapters If wireless won't reach, try a pair of HomePlug adapters. These devices plug into your home's power outlets and transfer data across your electrical wiring, and they're available from a variety of vendors, in both USB and Ethernet flavors, for around \$120 a pair.

USB Network Adapter You'd like to network your TiVo receiver, but it has no Ethernet port. No problem. Pick up a USB network adapter from your favorite Mac accessories vendor. These small devices, which cost a little over \$20, offer a USB connector on one end and an Ethernet port on the other. Plug a USB device into the connector, and string an Ethernet cable between your router and the adapter. With a little fiddling, that device should appear on the network.

A Hefty Hunk of Cat-5 Cable Sometimes, only wires will do. When you need to add an old computer to a network, keep some Category 5 Ethernet cable on hand; a 25-foot cable should do.



Dirty Sync Using iMovie to edit out-of-sync audio tracks in iPhoto slide shows isn't pretty, but it does the job.

Sunk by Sync

In iPhoto, I can create perfectly synchronized slide shows in which the images and soundtrack match up perfectly. But when I try to export such slide shows to a QuickTime movie, the pictures and sound fall out of sync. What can I do?

Craig Crossman

The solution is to not use iPhoto. Instead, open a new iMovie project, import your pictures as still images (you can import multiple images by dragging them into the clip bin), adjust their length as necessary (by selecting a photo, clicking on Show Photo Settings, and adjusting the tortoise-hare slider), and add a soundtrack to one of the program's two audio tracks. When everything is to your liking, export the project as a QuickTime movie. Choose File: Export, click on the QuickTime tab, and select an export setting from the Compress Movie For pop-up menu. Or send it to iDVD by choosing Share: iDVD.

If you've already exported your iPhoto slide show as a QuickTime movie and you'd rather not re-create it in another application, drag the movie into a new iMovie project. Place it in the timeline, and choose Advanced: Extract Audio to place the movie's audio into a track of its own. Once you've got the audio separated, you can pull it back into sync (see "Dirty Sync"). Again, choose File: Export to save the synced-up movie in QuickTime.

You can do something similar with GarageBand 3: launch it, choose New Movie Score from the opening window, name your project, and click on Create. In the resulting project window, drag the movie into the Video track to separate the video and audio (into the Video and Video Sound tracks, respectively). You can now nudge the audio track to get it into sync. Choose Share: Export Movie To Disk when you're done. □

Senior Editor CHRISTOPHER BREEN is the author of *Secrets of the iPod and iTunes* (Peachpit Press, 2004) and *The iTunes Pocket Guide* (Peachpit Press, 2005).

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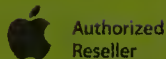
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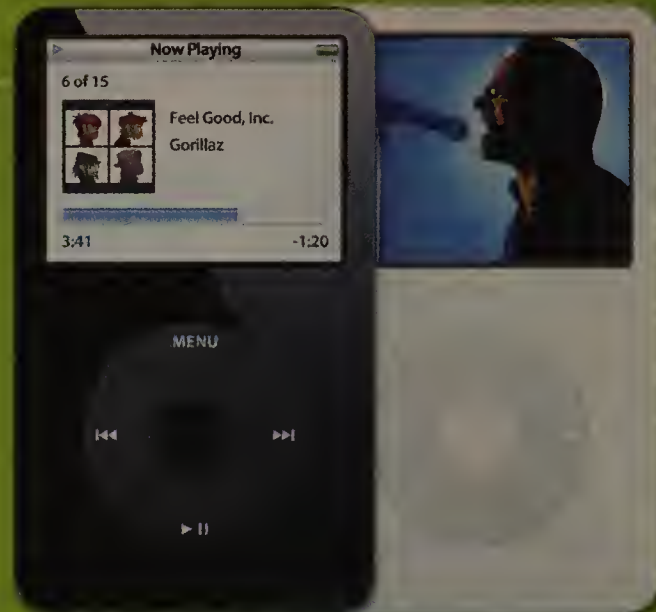
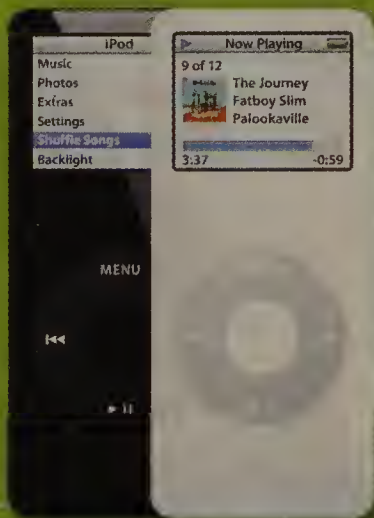
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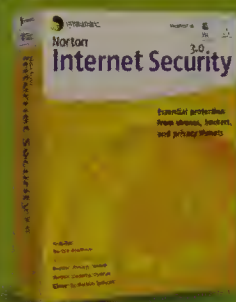
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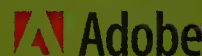


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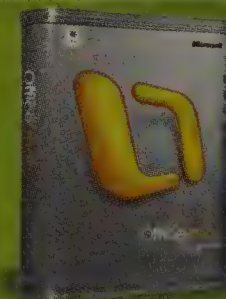
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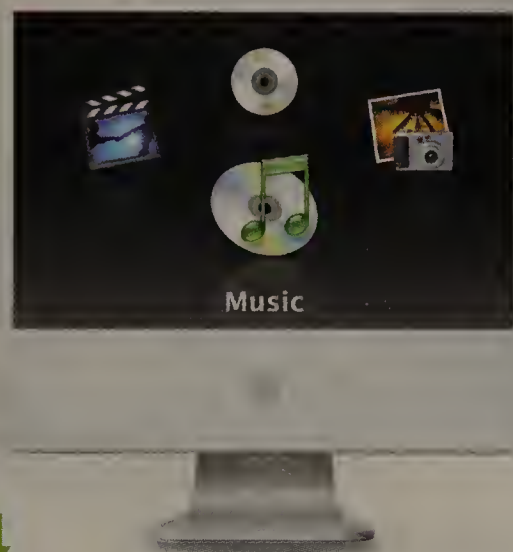
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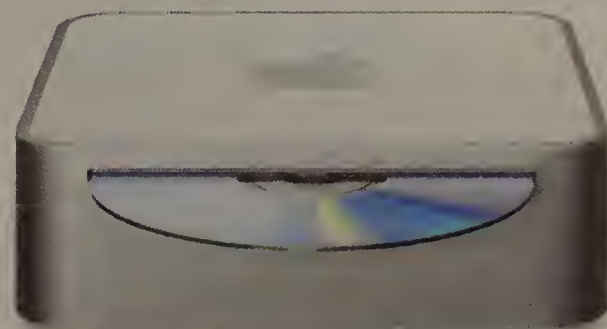
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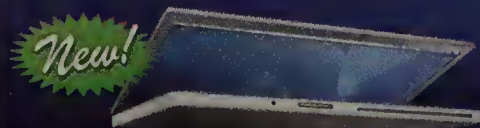
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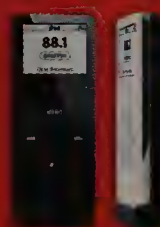
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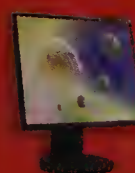
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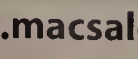
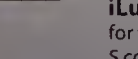
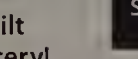
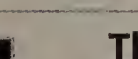
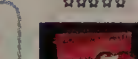
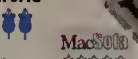
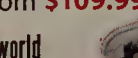
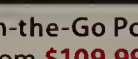
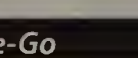
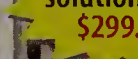
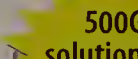
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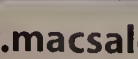
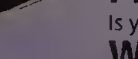
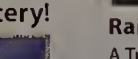
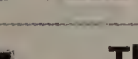
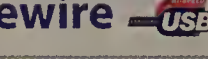
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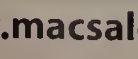
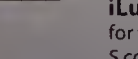
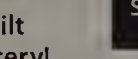
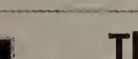
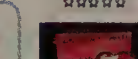
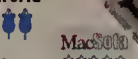
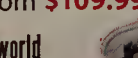
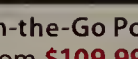
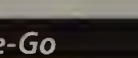
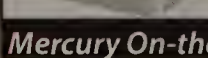
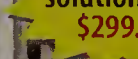
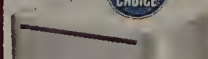
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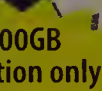
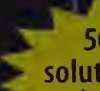
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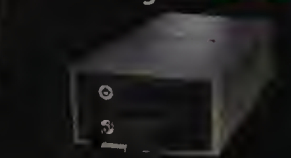
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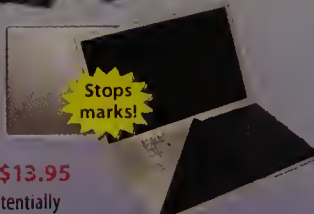
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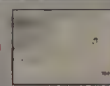
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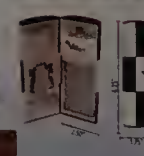
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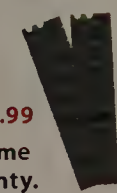
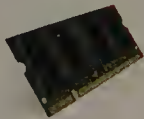
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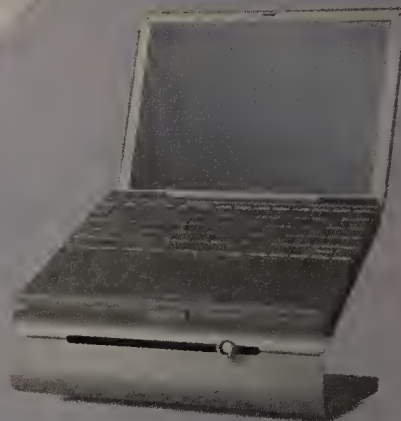
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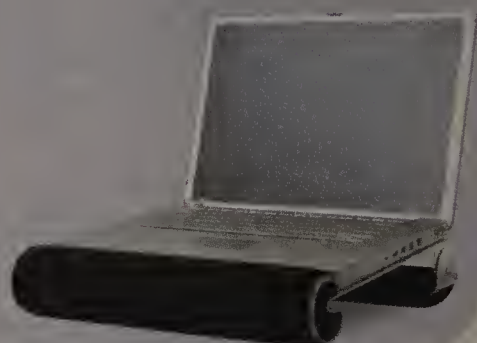
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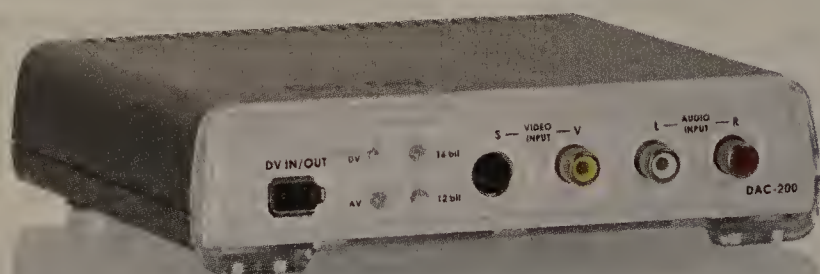


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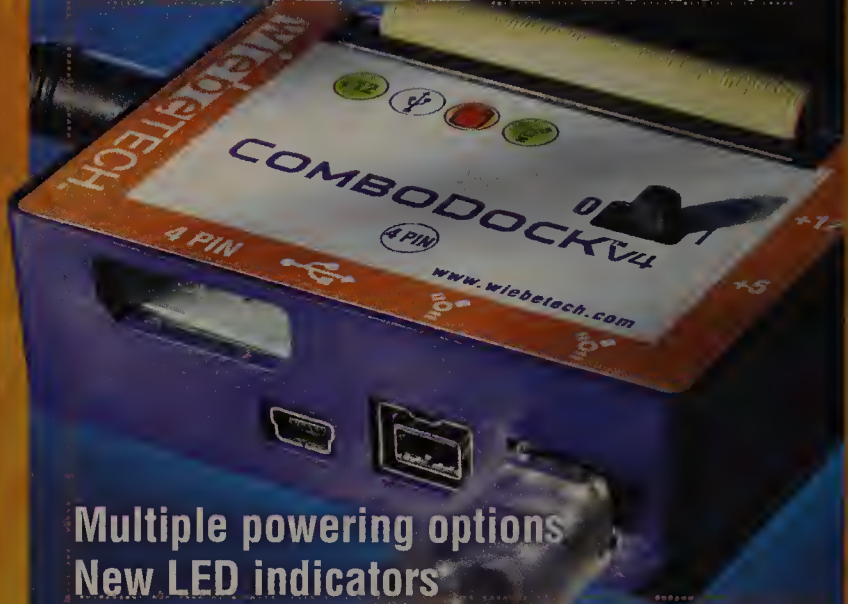
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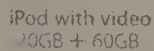
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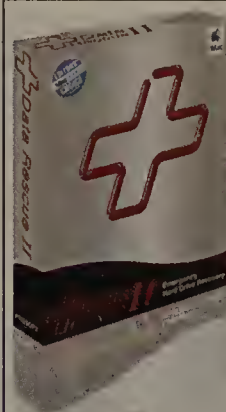
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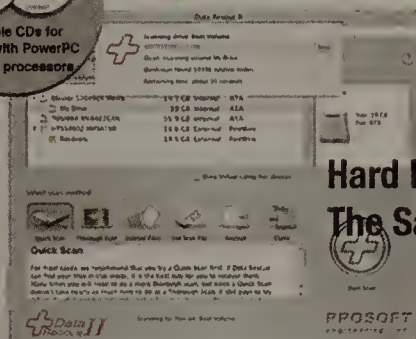
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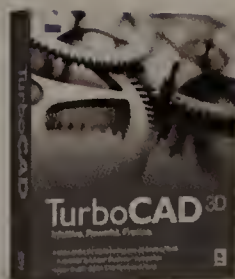

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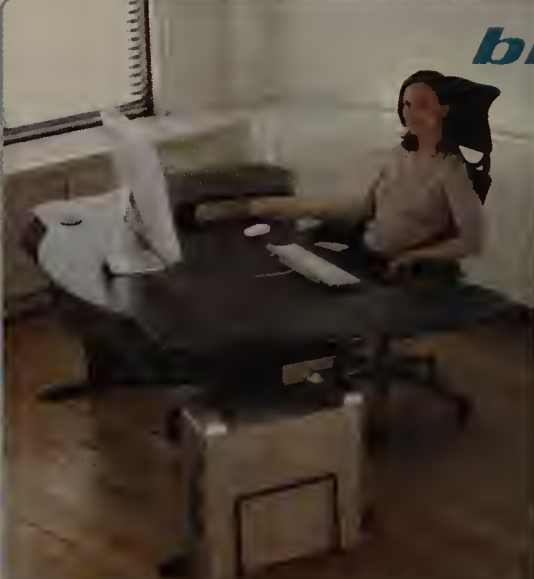


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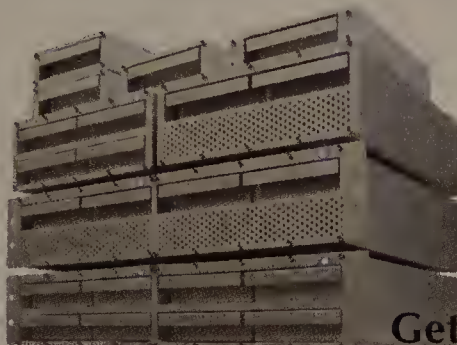
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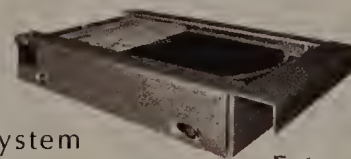


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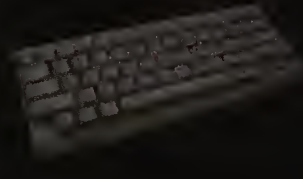
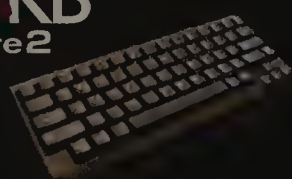
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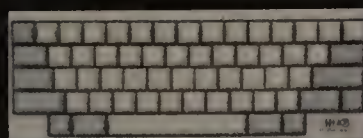
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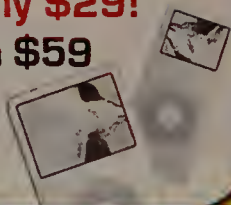
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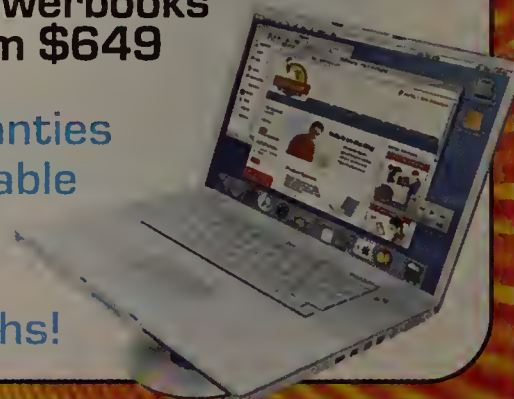
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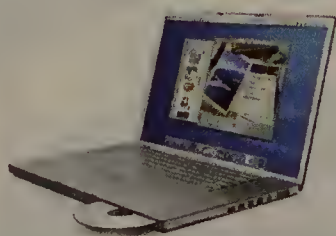
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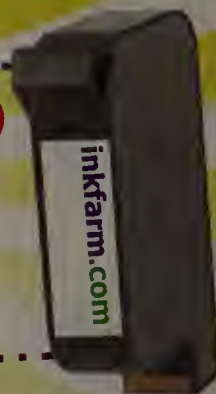


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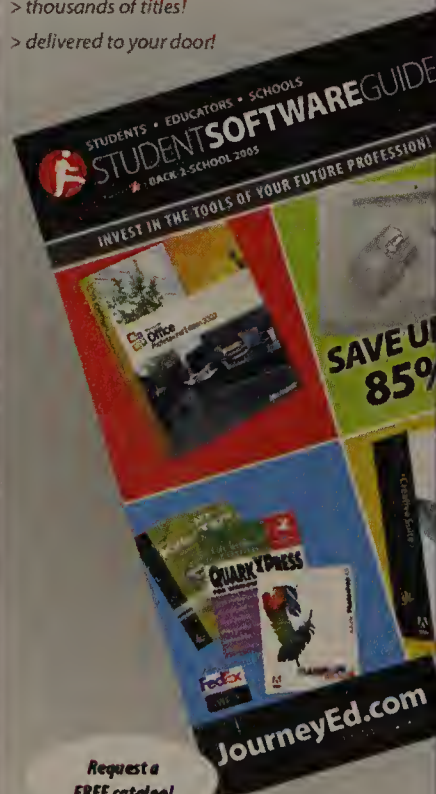
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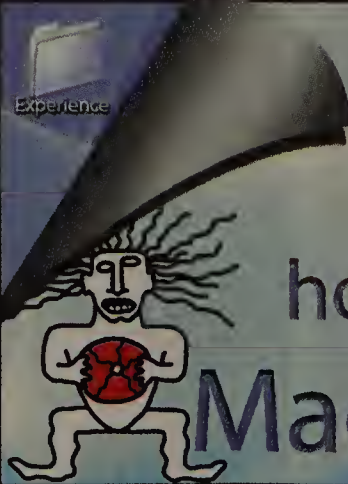
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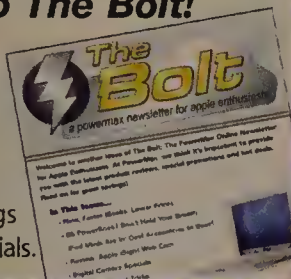
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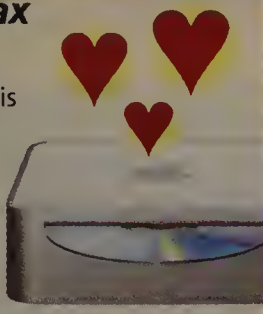
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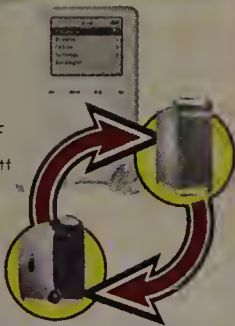
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- 14" iBook G4/1.2GHz 256MB RAM/60GB HD/Combo Dr .. \$838
- 15" PowerBook G4/1.25GHz 512 RAM/80GB HD/SuperDr ... \$1388
- 15" PowerBook G4/1.67GHz 512 RAM/80GB HD/SuperDr ... \$1599
- 17" PowerBook G4/1.67GHz 512 RAM/100GB HD/SuperDr .. \$1849
- 17" PowerBook G4/1.67GHz 512 RAM/120GB HD/SuperDr .. \$1988
- 15" MacBook Pro 2.0GHz core duo 1.0GB/100/SuperDr .. \$1979
- Power Mac G5/2.3GHz Dual-core 512/250 HD/SuperDr .. \$1988

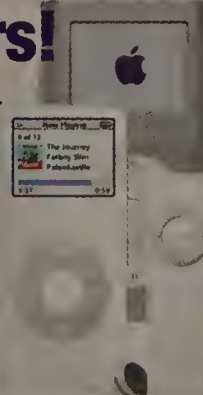
Pre-Owned iMacs

- CRT iMac G3/333 160MB RAM/6GB HD/CD-ROM \$129
- CRT iMac G3/600 256MB RAM/40GB HD/CD-RW \$499
- LCD iMac G4/800 dual boot 768/60GB/super 15" scrn..... \$839
- LCD iMac G5/1.8GHz 512/80GB/super 17" screen \$929
- LCD iMac G5/1.8GHz 768/80GB/super/Airport 17" screen .. \$999

iPod Headquarters!

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Open Box Macs On Sale!

Open box Macs are machines that have been used or demo'd for a very short time and are still under Apple warranty. Since most are virtually brand new, these machines are one of the best values around!

- 17-inch iMac -- G5/1.9GHz
512/160/SuperDrive/built-in iSight ... **\$1149**
- 17-inch iMac -- 1.83GHz core duo
512/160/SuperDrive/built-in iSight ... **\$1239**
- MacBook -- 2.0GHz core duo
512/60/SuperDrive/built-in iSight **\$1249**
- 15-inch MacBook Pro -- 1.83GHz core duo
512/80/SuperDrive/built-in iSight **\$1749**
- 15-inch PowerBook -- G4/1.67GHz
512/80/SuperDrive **\$1799**

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- 15" Apple Studio Display (ADC) **\$189⁹⁹**
- 17" Apple Studio Display (ADC) **\$299⁹⁹**
- 22" Apple Cinema Display (ADC) ... **\$719⁰⁴**
- 23" Apple Cinema Display (ADC) ... **\$777⁷⁷**

20-inch Displays:

- Apple Cinema Display (open box) .. **\$758⁸⁸**
- Apple Cinema Display (new) **\$798⁰⁰**
- Acer Flat-Panel Display (best seller) **\$439⁸⁸**

23-inch Displays:

- Apple Cinema HD Display (refurb) **\$1088⁰⁰**
- Apple Cinema Display (new) **\$1294⁰⁰**
- H/P Flat-Panel Display **\$754⁸⁸**

24-inch and Larger Displays:

- 24" Acer Flat-Panel Display **\$754⁸⁸**
- 24" Samsung Flat-Panel Display .. **\$1014⁸⁸**
- 30" Apple Cinema Display **\$2199⁰⁰**

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FROM THE EDITORS OF MACWORLD

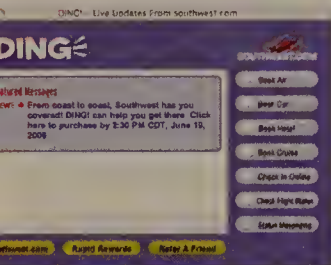


Alt Pack

Backpacks with iPod controls aren't so uncommon anymore. But add in Bluetooth connectivity, and you've got something special—as with JanSport's \$300 Alt Pack. One strap has iPod controls and a headphone jack, while the other strap features a nifty Bluetooth button and an integrated microphone. Pair your Bluetooth mobile phone with the Alt Pack, and you can make and take calls without missing a step—or taking out your phone. It even mutes your iPod and lets you hear your calls through your iPod's headphones. It's a great bag for any gadget lover (www.jansport.com).—DAN FRAKES

Southwest Airlines' Ding

My family lives in Los Angeles, so I'm often scouring the Web for cheap flights. Usually this involves numerous visits to Southwest Airlines'

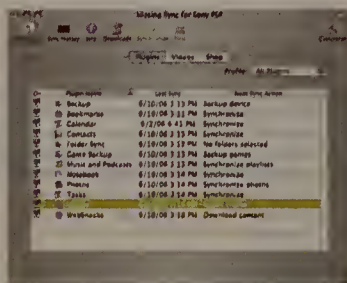


Web site—almost always the least expensive way to go—looking for good deals. But lately, I've been letting Southwest do the work for

me, with its free Ding application (just released for Macs). Ding alerts me with a visual cue—an envelope atop an airplane tail icon in the Dock—and Southwest's trademark *ding* sound when there are deals from my home in Oakland to LAX. The only downside: I have to act fast, as most of the offers expire within a few hours (www.southwest.com).—CYRUS FARIVAR

The Missing Sync for PSP

Connecting Sony's PlayStation Portable (PSP) to a Mac via USB and transferring files should be easy—until you actually try to figure out what goes where on the PSP's memory card. I'm happy that Mark/Space has stepped up to the challenge with the \$30 The Missing Sync for Sony PSP. This app backs up game files from the PSP's memory card, converts and transfers movies, and syncs iPhoto libraries and iTunes playlists to the PSP. It intelligently imports your Address Book and iCal info as Web pages that you can view with the PSP's built-in Web browser (www.markspace.com).—PETER COHEN



SERITEK/ 2SM2-E

The ExpressCard/34 slot on the MacBook Pro, which replaced the PowerBook's PC card slot, brought with it a lot of new possibilities that were deferred without cards to put in it. Thanks to FirmTek, that ExpressCard slot is finally good for something. The \$120 SeriTek/2SM2-E card provides external Serial ATA (eSATA) connectivity with transfer rates as fast as 3 Gbps for each of its two ports—much faster even than FireWire 800—for high-end video editing. FirmTek also offers the card bundled with a two-bay SATA RAID enclosure (without drives) for \$310 (www.firmtek.com).—PETER COHEN

WHAT'S HOT

Brought to you by John Moltz of the Crazy Apple Rumors Site (www.crazyapplumors.com)

- 1 Bill Gates announces he will leave Microsoft in July of 2008 to devote more time to charity work. Gates plans on using his foundation's huge budget and vast reach to put all competing charities out of business.
- 2 Apple faces criticism over labor practices at plants making the iPod. The company responded by releasing the Living Wage Special Edition iPod, which costs \$999.
- 3 John Dvorak reveals that he deliberately writes incendiary columns about the Mac to increase Web traffic to his column. After his revelation, Fox News immediately offered Dvorak an anchor position.
- 4 France softens a bill that would have required Apple to open its FairPlay DRM. As a sign of good faith, Apple will modify French iPods to limit English-language songs to no more than 60 percent of hard-drive capacity.

Astronomy Picture of the Day



ASTRONOMY WIDGETS

People may debate whether Tiger's Dashboard is useful, but as an outer-space enthusiast I'm delighted to be able to feed my obsession with some free widgets. From solar flares to supernovas, haym37 Software's Astronomy Picture of the Day (macworld.com/1484) reveals a gorgeous photo from NASA every morning. Bill Dunford's Riding with Robots Widget (macworld.com/1485) tracks photos sent from 16 robotic space probes exploring our solar system. And Texas A&M Astronomical Observatory's Sunlit Moon (macworld.com/1486) lets me follow the phases of the moon.—SCHOLLE SAWYER McFARLAND

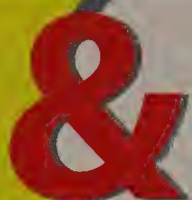
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THE FINESSE OF HP'S NEW PIGMENT INKS BY PATRICK MORGAN.



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Speed and accuracy are crucial, especially in fashion work. The new HP printers' pigment-based ink technology prints faster yet still gives you precise color control for vibrant, consistent color. Every print turns out good enough for a gallery.

HP BY MORGAN.

In Patrick Morgan's world, if your work isn't printed quickly and correctly, it's not worth printing in the first place. Which is why artists like him appreciate the accuracy and speed of HP's new Photosmart Pro B9180. In addition to the B9180, HP makes a complete selection of dye and pigment-based inkjet printers, putting superb performance within the reach of every artist and graphic designer. Print sizes range from 13" to 24", with gallery-quality prints that resist fading for up to 200 years under glass.¹ To learn more or to request a print sample, please visit www.hp.com/go/graphicdesign4.



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